

12 April 1982

USSR REPORT  
TRANSPORTATION

No. 78

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AIR

#### METHODS NOTED FOR IMPROVING ONBOARD GUIDANCE SYSTEMS

Moscow VOZDUSHNYY TRANSPORT in Russian 29 Dec 81 p 3

[Article by V. Kuznetsov, graduate student at the Kiev Institute of Civil Aviation Engineers and A. Timoshenko, engineer with the Onboard Aircraft Automatic Guidance Systems Group of Borispol'skiy Airline, Kiev: "How to Make Our Systems More Reliable"]

[Text] The reliability of onboard aircraft automatic guidance systems is one of the most important factors in flight safety and regularity.

In analyzing how these systems operate we can distinguish two major particular features. First of all there is the fact that it is impossible to service these systems and other types of equipment simultaneously. An aircraft therefore stands idle during regular periodic servicing for at least 30 percent of the overall maintenance time.

Secondly, the majority of failures--up to 80 percent--become apparent in flight, a factor which is explained through imperfections in the technical maintenance of onboard systems. Statistical checking methods do not always enable us to uncover on the ground a failure that manifests itself in flight. Such a deficiency can be eliminated only through laboratory checks and systems adjustment on a total-complex basis. Here we're talking about development engineers who should be responding more effectively to comments from the floor.

Nor does the quality of repair work facilitate reliability in the onboard systems. The existing arrangement for restoring those units which failed during the post-repair warranty period does not encourage enhanced quality at the industry repair plants.

Even if the above-mentioned deficiencies were eliminated, the totality of these particular features of systems operation would not permit an increase in their reliability to the extent necessary, or lower the idle time spent in maintenance. Hence we must draw the conclusion that the existing form of maintaining these systems is not effective.

Seeking new forms, the Kiev Institute of Civil Aviation Engineers, the Ukrainian Administration and the Borispol'skoye Airline, with the backing of the Main Administration for Operation and Repair of Aviation Equipment of the Ministry of Civil Aviation has been conducting special research for several years.

Two complementary methods have been formulated for dynamically monitoring today's automated guidance systems equipment--in particular, the onboard aircraft automatic guidance systems. The first involves conducting functional diagnostics testing utilizing flight information from onboard collection and recording systems. The second consists of systems monitoring using dynamic test rigs for checking the system as a whole.

Results of the research are reflected in methods of evaluating systems functioning by the proximate method of processing flight information. These methods have shown their effectiveness in tests at the Borispol'skoye Airline complex and are being implemented in other collectives.

However, limited capabilities of the standard-issue failure detectors do not enable us to attain better results. Calculations show that the introduction of additional flight parameters in the amount of 25 percent of the overall parameter volume listing for standard-issue onboard detectors of the MSRP-64 variety will permit an 80 percent average reduction in aircraft idle time for the servicing of modern onboard aircraft automatic guidance systems alone.

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# KHABAROVSK PLANT TO HANDLE MI-2 HELICOPTER REPAIRS

Moscow VOZDUSHNYY TRANSPORT in Russian 8 Dec 81 p 1

[Article by V. Sopolev, engineer at the Far East Civil Aviation Administration:  
"The Mi-2 Comes Out of the Plant Hangar"]

[Text] No longer do airlines of the Far East, the Yakut region and Eastern Siberia have to send their Mi-2 helicopters thousands of kilometers to the western regions of the country for major repairs. They may now be sent to civil aviation aircraft repair plant No 24 in Khabarovsk. The first Mi-2 to get a new lease on life on the shores of the Amur was accepted by the client, the airport for Khabarovsk's local flights, with an evaluation of "excellent."

A great deal of preparatory work preceded assimilation of the new operation. Until now the Khabarovsk plant repaired only An-2 airplanes. A group of plant experts therefore visited related airlines in Tyumen' and Mineral'nyye Vody early in the year and then organized their own training for engineers, technicians and workers. With their own efforts they rebuilt working areas, constructed test rigs, machining attachments, docks and other equipment. One can judge the scale of the effort if only by the fact that the plant's specialists studied about 300 production processes for repair and developed expertise in over 100 production methods.

Helicopter section workers of the "Aircraft Repair" All-Union Association assisted in resolving the many problems encountered by plant personnel. The plant also received assistance from specialists of the related plant at Mineral'nyye Vody. Assembly and adjustment work was completed in September and the first helicopter appeared before the general commission. Ground and flight testing was then successfully conducted.

The capability of repairing the Mi-2 in Khabarovsk will result in great fuel economy--the fuel which before was being burned wastefully during unproductive thousand-kilometer trips will be saved. In addition, the airlines will save hundreds of hours of flying time. And the relief provided to aircraft repair plants in the western region will enable us to reduce the time required for repair, thus providing thousands of additional hours of helicopter operation to serving the needs of the national economy.

A great deal of creative ingenuity and technical mastery was exhibited in the preparation to assimilate the new mode of operation by the director of the plant's technical division, G. Vlasov, by senior engineers N. Buraya and N. Barakhov, senior ex-

perts A. Lavshchuk and V. Ushakov and fitters A. Kovalevskiy and A. Pis'mak, as well as many other workers and employees of the plant.

The Khabarovsk aircraft repair plant will be half a century old in 1982. Its assimilation of Mi-2 helicopter repair operations is a fitting present to honor the event.

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## YAK-42 SETS NEW WORLD RECORD

Moscow VOZDUSHNYY TRANSPORT in Russian 19 Dec 81 p 3

[Article by M. Sokolovskaya, special correspondent, Sheremet'yevo: "Yak-42 Sets New World Record"]

[Excerpts] Penetrating low-level clouds, the white-winged airplane was making a swift and smooth approach for landing. People at Sheremet'yevo were anxiously awaiting this Yak-42 with side number 42306 which was returning to Moscow after a record flight. During the night of the 14th and through the 15th of December this "Yak" completed its flight nonstop from Moscow to Khabarovsk, covering 6144 kilometers and establishing a unique world record for an aircraft in its class.

What were the particular features of this record flight?

Here are crew commander V. Mukhin's comments: "I think the most important thing is the fact that our Yak-42 is the most ordinary, series-production aircraft. We put no additional equipment on the plane for the record flight, nor did we take on extra fuel. We simply treated it like an ordinary flight. This was the only way to discover the plane's potential. We flew the great-circle route (i.e., the shortest distance between two points). There was a problem in that the terrain we overflew was not well referenced, and there isn't much in the way of ground-based radio navigation equipment in the expanses of Siberia and the Far East. It was therefore necessary to operate very carefully. We flew at an altitude of 9600-11,400 meters and selected the optimal modes of operation. This enabled us to limit our fuel expenditure to 17 tons. Another interesting detail--for about four hours during the flight the onboard temperature was minus 74 degrees. Like in Antarctica! But this didn't prevent us from establishing our record."

S. Andreyev, deputy chief designer of the design office stated: "The Yak-42 flies Aeroflot routes 1850 kilometers in distance. After today's flight we can assume that its scope of operation will increase significantly--now that it's been shown that the aircraft is able to make long flights without refueling at an airport along the way. This will result in considerable fuel savings. The design office collective is now working on increasing the plane's in-flight weight."

The Yak-42 has established eight world records over the past year for speed and freight-carrying capacity. Here we have a new outstanding achievement. Flight data and materials are now being sent to the International Aviation Federation for confirmation.



AIR

LATVIA RECEIVES TU-154B

Moscow VOZDUSHNYY TRANSPORT in Russian 8 Dec 81 p 2

[Article by T. Vad'kin: "Latvia Becomes the First Baltic Republic to Receive the Tu-154B"]

[Text] "We've been waiting a long time for an airplane of this kind," stated G. Sokolov, deputy director of the Latvian Civil Aviation Association. Timely preparation was made for its arrival. It was necessary to re-structure ground service operations and retrain specialists taking into account the specific characteristics of the new aircraft. Flight personnel underwent apprenticeship training in Sverdlovsk, Leningrad and Mineral'nyye Vody. The mission of ferrying the airplane to Riga from Kuybyshev, where it was built, was entrusted to our foremost flight personnel. Piloting the aircraft was Pilot First Class P. Leyniyens. Accompanying him were copilot Ya. Terauds, navigator N. Yermakov and flight engineer A. Topchiy.

Setting the Tu-154 down at Riga's airport, the crew checked out a strip for taxiing that was specially prepared for the aircraft's arrival and they were able to use new tow tractors.

The Tu-154 aircraft will enable the people of Riga to "offload" flights to Moscow and southern-bound flights. Vacationers from all over the country will be able to travel in great comfort to the famous resorts on the Riga coast. By the end of the five-year plan, the family of Latvian Tu-154's will number 10 such aircraft.

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# INEFFICIENCY IN CARGO HAULING REPORTED IN TYUMEN'

Moscow EKONOMICHESKAYA GAZETA in Russian No 43, Oct 81 p 15

[Article by V. Shapovalov, chairman of the Airline No 2 Public Supervisors Group, Tyumen': "A Motor Vehicle Instead of a Container"]

[Text] Sometimes one observes an amazing scene at the airports of the northern cities Nadym and Urengoy. It has become "stylish" here to use motor vehicles for hauling freight instead of containers. Let's say they send an empty vehicle by air from Nadym to Tyumen', load it up there, then send it back to Nadym.

The authors of this original method are trade organizations in these cities. It's true that they have containers and pallets for transporting freight, but they don't use them. There are many containers and pallets piled up at the airports, some of which are smashed, though each one costs thousands of rubles.

As public supervisors we often encounter instances of the grossest violations of regulations governing use of aircraft by clients. Many times we have come across attempts to load an Il-76 with just 20 tons of cargo instead of 36--sometimes even less. Various clients have tried to justify their actions in this regard--representatives from the Main Tyumen' Administration for Gas and Petroleum Construction, Main Administration for Siberian Pipeline Construction, Main Administration for Siberian Housing Construction, the "Siberian Full-Unit Installation" Association, and other organizations of the Ministry of Gas and Petroleum Construction: "We've paid our bill in full--what else do you want?"



Key: 1. Nadym  
2. Tyumen'

What we want is an end to this kind of extravagance. We must increase commercial loading of aircraft--this will lower the cost of shipment and fuel expenditures. There is great room for improvement here.

We have approached clients time and again with respect to the proper loading of aircraft. Corrective action is slow in coming, however. When we consider that the facilities for a variety of central boards and departments are located on the grounds of Tyumen' Airport, we think it's necessary to establish a permanent council of chairmen of public-supervisor groups for major clients and airport personnel so as to exercise effective supervision of cargo movement at the airports. In order to avoid having to maintain cargo-loading teams and equipment for every trust and association at the airports on a round-the-clock basis, it is best to combine them into integrated, full-complement teams. This will enable us to significantly reduce the staff at these facilities, speed up loading and unloading operations, and permit more effective use of aircraft.

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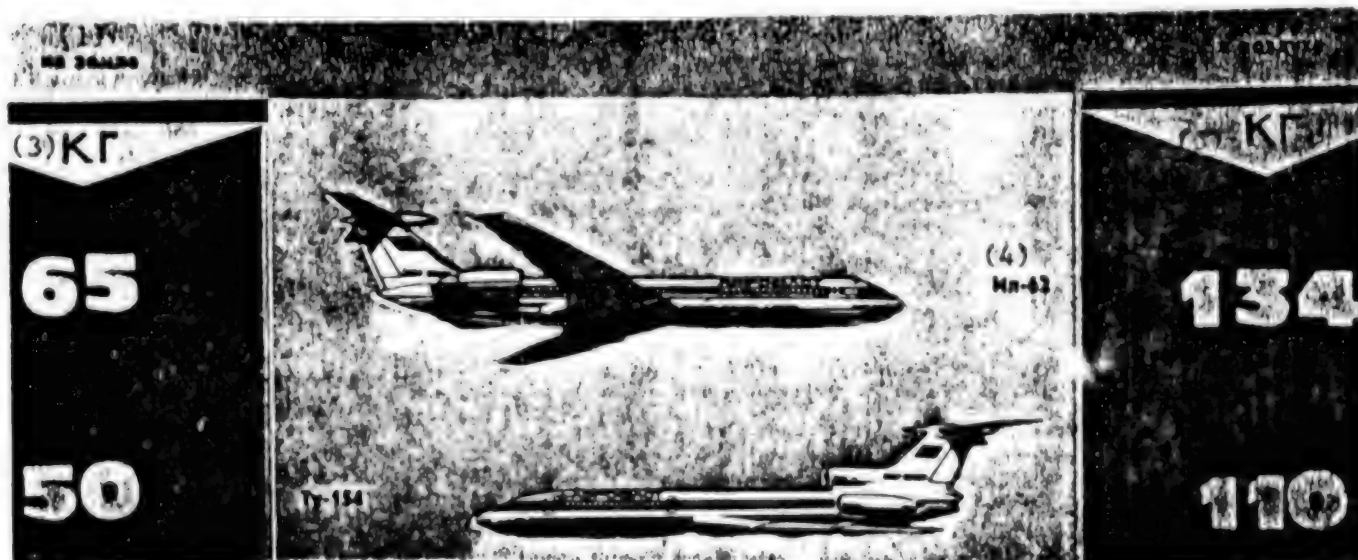
# FUEL USE STATISTICS FOR VARIOUS AIRCRAFT GIVEN

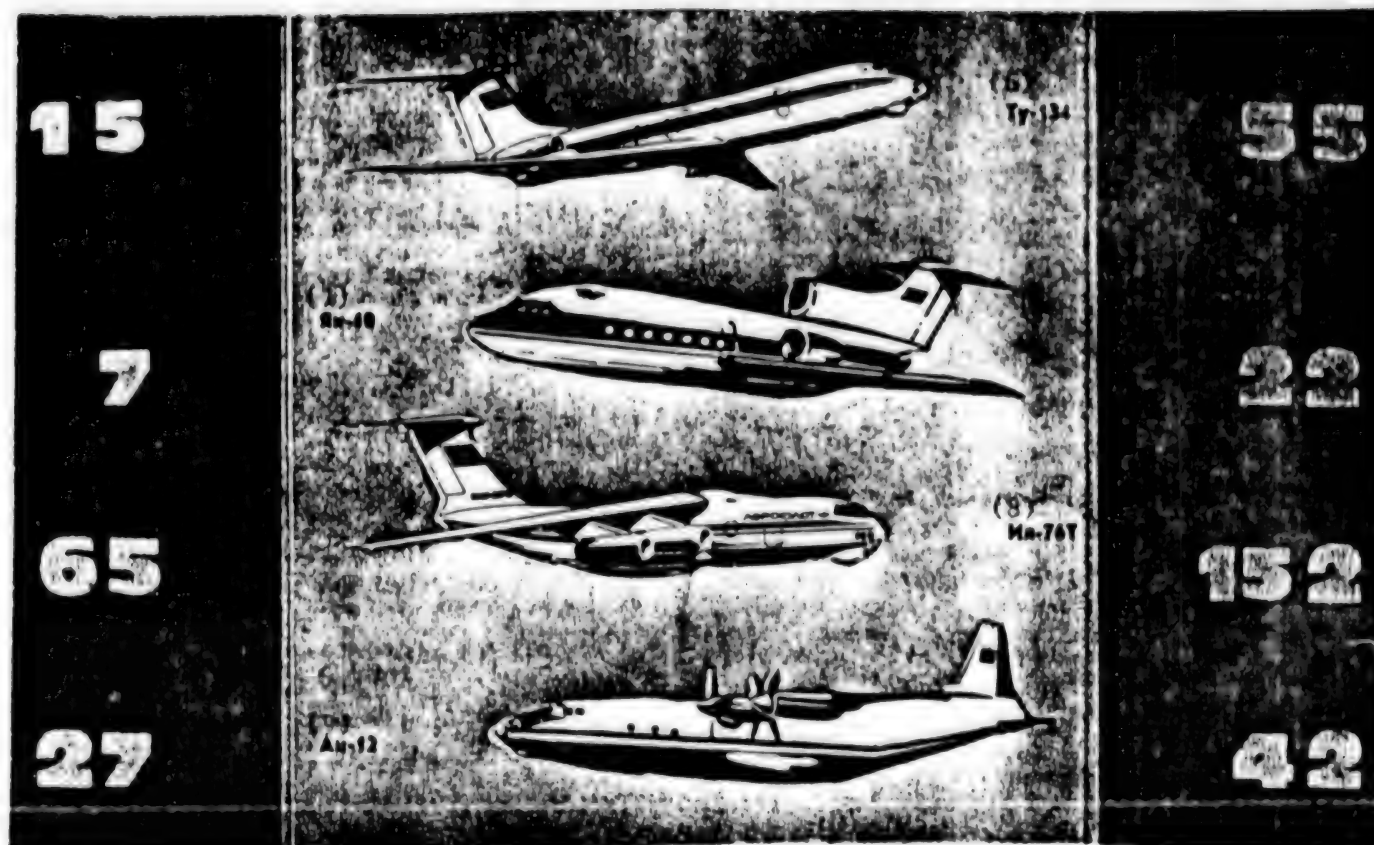
Moscow GRAZHDANSKAYA AVIATSIYA in Russian No 12, 81 p 20

[Editorial: "The Cost of a Single Minute"]

[Text] The 26th party congress determined that our further progress will depend more and more on the capable and effective utilization of all available resources of labor, fixed capital, fuel and raw materials. The CPSU Central Committee and the USSR Council of Ministers adopted a resolution "On Enhancing Efforts to Promote Economical and Efficient Use of Raw-Material, Fuel-Energy and Other Material Resources." The resolution stresses that one of the most important socialist-competition criteria for successfully fulfilling the tasks of the 11th Five-Year Plan must be the indicators that reflect a decrease in material expenditures and economy with respect to all the most important resources. For civil aviation, an extremely large-scale consumer of fuel, the problem of careful fuel expenditure and economy is one of the most important tasks.

Airline employees should know that a reduction in engine operating time of just one minute will result in fuel savings as shown:





Key:

- |                  |           |
|------------------|-----------|
| 1. on the ground | 6. Tu-134 |
| 2. in the air    | 7. Yak-4  |
| 3. kilograms     | 8. Il-76  |
| 4. Il-62         | 9. An-12  |
| 5. Tu-154        |           |

Comparable figures for other types of aircraft and helicopters are as follows:

Il-86: 98/192; Yak-42: 23/48; Il-18: 27/40; An-24: 6/15; L-410: 2/5; An-26: 8/18; An-30: 8/15; Il-14: 2/7; An-2: 0.8/2; M-15: 3/8; Mi-2: 1.8/4; Mi-4: 1.2/3.8; Mi-6: 18/39; Mi-8: 4/10; Mi-10: 18/39; Ka-26: 0.6/2.

Airline employees! Keep up the fight for careful expenditure of kerosene and benzine, our most precious fuels!

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## MOTOR VEHICLE

### OFFICIALS REPORT ON TRAFFIC SAFETY

Moscow AVTOMOBIL'NYY TRANSPORT in Russian No 1, Jan 82 pp 12-13

[Report on All-Russia Traffic Safety Conference: "Problems of Traffic Safety"; passages enclosed in slantlines printed in boldface]

[Text] /The All-Russia Conference of Chairmen of Traffic Safety Commissions of the Autonomous Republics, territories, oblasts and the cities of Moscow and Leningrad, executives of ASSR Ministries of Internal Affairs and the Internal Affairs Administrations of ~~city and oblast~~ ispolkoms was held 15-16 December in Volgograd. It was opened by V. A. Demchenko, Vice-Chairman of the RSFSR Council of Ministers. It was attended by I. P. Trofimov, deputy head of the Transport and Communications Department of the CPSU Central Committee, Yu. I. Lavakin, Chairman of the Volgogradskiy Ispolkom, B. A. Morozov, Deputy Minister of Railways of the USSR, Lieutenant-General of the Militia V. V. Lukyanov, Chief of the Central GAI [State Automobile Inspection] Administration of the USSR Ministry of Internal Affairs, executive personnel of USSR and RSFSR ministries and departments, the apparatus of the RSFSR Council of Ministers, the AUCCTU, and the RSFSR Committee of People's Control. The conference was addressed by chairmen of traffic safety commissions, who told of their work, experience and role in assuring traffic safety and protecting the environment./

/D. A. Skorod'ko, Vice-Chairman of the Volgogradskiy Oblispolkom/, spoke about the work of the Volgogradskiy Oblast Traffic Safety Commission. The oblast has accumulated positive experience in the comprehensive, planned solution of traffic safety problems.

During the 10th 5-Year Plan period the number of motor vehicles in the oblast increased by almost 30 percent, while the number of privately owned cars rose by 37.3 percent. The problem of ensuring traffic safety and preventing accidents has, therefore, become extremely acute. Its solution calls for the development and improvement of the road network, improvement of the technical condition of vehicles and, most important, continued strengthening of the discipline of those involved in traffic and strict observation of the Traffic Rules. All these questions are constantly at the focus of attention of the oblast and rayon traffic safety commissions.

In 1981-1985, it is planned to build not less than 1,800 km of roads in the oblast, that is, 300 km more than was built in the preceding 5-Year Plan.



Regularly, twice a year, the GAI officials and the motor transport and road organizations jointly evaluate the state of roads in the oblast and outline specific measures to eliminate shortcomings.

Schools in the oblast are building traffic safety auditoriums and traffic training grounds for children.

Road patrol units are being set up and many drivers are participating in them on a voluntary basis. Traffic safety contests are conducted regularly and the winners--the most disciplined drivers and best motor transportation enterprises--are awarded diplomas and valuable prizes.

In the communities the rural soviets are setting up public GAI posts. The oblast traffic safety commission, together with the oblast Komsomol committee, holds annual rallies of young drivers. It has become a yearly tradition to hold meetings of foremost drivers of city enterprises before they leave for the harvesting campaign.

The oblast commission attaches great importance to extensive propaganda and dissemination of traffic safety rules and the use of the mass information media. State Automobile Inspection personnel also have many volunteer traffic safety aides from among members of people's patrol groups. Operating on a voluntary basis in the oblast are 43 rayon headquarters involving 602 nonstaff GAI personnel and 10,000 people's patrol group members.

State Automobile Inspection officials enjoy the wide support of local party and soviet agencies. At its sessions the oblast commission regularly considers such questions as the organization of public traffic safety control on the city motor and electrical transportation systems, the condition of the bus fleet in the oblast, the prevention of traffic accidents involving children, the role of primary organizations of amateur motorists in reducing traffic accidents, etc. At all its sessions the oblast commission hears reports by executives from rayon and city commissions. Prior to such reports members of the oblast commission travel to the respective rayons for on-the-spot inspections.

All these measures are continuous efforts, not occasional drives, and they are yielding results. Despite the annual growth of traffic in the cities and on the roads of the oblast, the number of traffic accidents is declining. In the past 5 years the collective of the Volgogradskiy Oblispolkom GAI gained prize-winning places six times, and by a joint decision of the AUCCTU and the collegium of the USSR Ministry of Internal Affairs it was awarded first place and received the Challenge Red Banner for the first 6 months of 1981. Despite positive trends in work for the prevention of traffic accidents, some shortcomings and difficulties in solving the problem exist. In particular, D. A. Skorod'ko stressed the poor equipment of main highways, the absence of road markings and reflectorized road signs. The rate of construction of bridges over railway tracks is slow. It is necessary to improve the training of traffic safety specialists in the automotive and highway departments of polytechnical institutes.

/N. V. Nikanorov, First Deputy Minister of Motor Transportation of the RSFSR/, spoke of the state of affairs and the measures being taken by the Motor Transport



Industry to ensure the safety of passenger transportation. A complex of obligatory measures to improve traffic safety is being introduced at the ministry's enterprises. The main attention is given to work with drivers: improving their professional training and retraining, training in simulators and at vehicle testing grounds. Every year all drivers must attend special classes providing instruction in correct actions in dangerous traffic situations.

For many years now the ministry's motor transport enterprises maintain medical stations providing medical checkups for drivers prior to trips and traffic safety departments. Motor vehicle administrations and enterprises are informed of traffic accidents on a monthly basis. All this helped to reduce the number of traffic accidents in 1980 by 10 percent as compared with 1970. For the last 3 years more than 200 motor transport enterprises have been operating without a single traffic accident.

/V. V. Lukyanov, Chief of the Central Department of the State Automobile Inspection of the USSR Ministry of Internal Affairs/, spoke about motor transport accidents. Whereas at the beginning of the 10th 5-Year Plan, the number of traffic accidents annually increased, subsequently a declining trend appeared. However, the number of traffic accidents on roads still remains high.

The oblast and city commissions, which coordinate the efforts of organizations, enterprises and the public on the local level, have an important part to play in ensuring traffic safety. The commissions' experience indicates that much depends on the initiative of GAI personnel, who should be active and raise issues in good time and make proposals on the basis of the actual operating conditions of vehicles.

Today environmental protection is a high-priority problem. A number of oblasts have already built diagnostic centers to check the content of noxious components in exhaust gases of vehicles, but there are still very few such centers and more should be done to set them up everywhere.

Many accidents occur on rural roads. Here, it is very important to involve extensive public participation in traffic safety efforts. It is necessary to seek out competent people to work as nonstaff GAI personnel and to reward them for good work.

Combatting child injuries on roads is an important element in the work of the commissions and GAI agencies. It is necessary to improve driver training and make greater use of technical means of education. Currently there is too much variety in the quality of driver training in driving schools and courses sponsored by various departments, which has a negative effect on traffic safety.

Every GAI official looking after motor traffic must be not only strict and fair in his demands for observing traffic rules, but also display good will and be always ready to help drivers and make them aware of the road situation. An atmosphere of good will on the roads is a very important factor in the drive for work without accidents.

/G. V. Sergeyev, Deputy Minister of Public Health of the RSFSR/, spoke of the work of public health organizations aimed at preventing traffic accidents and reducing the gravity of their consequences. The address of P. A. Kolomyts, Deputy Minister of Agriculture of the RSFSR/, was devoted to the state of affair regarding accidents in collective farms and state farms and measures aimed at reducing them. /G. N. Borodin, Deputy Minister of Highways of the RSFSR/, spoke about road construction and maintenance in the republic. A total of 22 participants spoke at the conference.

Summing up the results of the conference, /V. A. Demchenko, Vice-Chairman of the RSFSR Council of Ministers/, said that during the years of the 10th 5-Year Plan the number of traffic accidents per 10,000 transport units was slashed by 38 per cent, there were almost one-quarter fewer people killed and one-third fewer wounded in traffic accidents. This was a consequence of the greater attention devoted by the Councils of Ministers of the Autonomous Republics, kray ispolkoms and oblast ispolkoms, ministries and departments to questions of traffic accident prevention, strengthening driver discipline, improving road conditions and the technical condition of vehicles, and dissemination of traffic rules among the population, especially among children. An example of the attention devoted to these questions is the Volgradskaya oblast, where the oblast party committee and ispolkom adopted a joint resolution and approved an integrated plan of measures for preventing traffic accidents for 1981-1985. The experience of the Astrakhanskaya, Gor'kovskaya, Orlovskaya, Rostovskaya and Saratovskaya oblast ispolkoms in traffic accident prevention is also worthy of attention.

Wherever proper attention is not given to this important work the accident rate in motor transport remains high. In Tambovskaya Oblast, for example, the accident rate is almost double the average for the republic. The number of traffic accidents has increased in Omskaya, Kaluzhskaya, Kuybyshevskaya and Kamchatskaya oblasts.

All is not well with respect to drivers' discipline. Drivers are to blame in almost 3/4 of all registered traffic accidents in the RSFSR. Moreover, every third accident occurs in a rural locality, and every other one involves a driver under the influence of alcohol.

It is not well going with driver discipline and traffic safety in collective and state farms of the RSFSR Ministry of Agriculture. An inspection carried out by officials of the RSFSR Council of Ministers revealed that in 1981 the agricultural production associations of Kaluzhskaya, Tambovskaya and Kirovskaya oblasts, Stavropol'skiy Kray and Udmurtskaya ASSR planned no traffic accident prevention work, made no effort to reveal the causes of accidents, and did not carry out inspections. This despite the fact that preventive work at motor transport enterprises has a decisive impact on the accident rate.

Motor vehicle enterprises of the RSFSR Ministry of Motor Transport and Highways, for example, enforce a series of preventive measures which embrace the whole system, from the ministry to the enterprise. Unfortunately, while the accident rate has declined somewhat, an alarming situation has developed at enterprises of the Motor Transport Ministry with regard to passenger bus transport. Most of the

accidents were due mainly to violations of the rules of driving through railroad crossings, exceeding speed limits, violating passing rules, and driving buses under the influence of alcohol.

Executive personnel of RSFSR ministries and departments and the chairmen of kray and oblast traffic safety commissions in the republic must give special attention to the prevention of such accidents. The most skilled and disciplined drivers should be chosen to drive buses. There are considerable possibilities for reducing the motor transport accident rate through the merger of small motor depots. It has been established that depots with 55-65 vehicles have an accident rate almost 80 percent below that of depots with 15-20 vehicles.

In the years of the 10th 5-Year Plan, 47,000 km of general-purpose roads were built in the republic. Overall, accidents due to poor road conditions dropped 16 percent in 1980 as compared with 1975. Nevertheless, the state of roads still does not meet present-day requirements. The low level of equipment of roads with such service facilities as gas stations, rest stops, repair and maintenance stations and an inadequately developed technical aid system holds down productivity and working conditions of drivers considerably.

The problem of ensuring traffic safety is many-sided, complex and laborious. It involves the interests of many organizations. Its solution calls for scientifically substantiated approaches and methods of work the introduction and utilization of modern scientific-research developments and the newest means of traffic control.

The social and economic consequences of traffic accidents are great, which is why it is necessary for all local government, economic and judicial agencies to improve work aimed at increasing traffic safety.

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CSO: 1829/144

UDC 621.643.002.2+625.711.3

ROAD CONSTRUCTION-TRANSPORTATION SUBDIVISIONS PROPOSED FOR PIPELINE CONSTRUCTION

Moscow STROITEL'STVO TRUBOPROVODOV in Russian No 11, Nov 81, pp 16-17

[Article by R. M. Shakirov and A. K. Andrianov, Glavvostoktruboprovodstroy, Ufa, and V. G. Karpov, Ufa, Petroleum Institute: "Road-Transportation Support for Pipeline Construction"]

[Text] The relatively short shipping period and poorly developed road system in the swampy and flooded regions of the Far North and Western Siberia have a significant effect on the rate of construction of trunk pipelines there.

The experience of subdivisions of Glavvostoktruboprovodstroy [Main Administration of Pipeline Construction in Siberia and the Far East] in construction of the Polar Ural segment of the Punga-Ukhta gas pipeline system shows that cutting one day from hauling time for pipe sections fosters a reduction of almost four days in the total time required to perform all the jobs to build a part of the line. Solving the problems of road and transportation support makes it possible to use machinery efficiently.

Winter roads play the principal part in road and transportation support for construction of trunk pipelines in swampy northern regions. The quality of the winter road determines the traveling speed of pipe trucks, the number and duration of halts in transportation for various conflict situations and delays, the number of pipe sections that are dropped, the time required to clean up the road, the number of tractors required to tow vehicles, the nerve-emotional stress on drivers, and so on.

The "Instructions on the Design, Construction, and Maintenance of Winter Vehicle Roads over Snow and Ice in Siberia and the Northeastern USSR" (VSN 137-77/Ministry of Transport Construction), winter roads are divided into two categories: I — with a calculated traffic intensity, figured in terms of vehicles with five tons load capacity, of more than 150 vehicles a day; II — with a calculated traffic intensity of less than 150 vehicles a day (see table below). Most of the service roads and roads along the line in the construction of trunk pipelines in Western Siberia should be classified in category I. But the actual condition of the winter roads does not satisfy either category I or category II.

# Basic Technical Parameters of Winter Vehicle Roads

Basic Parameters	Winter Vehicle Roads	
	I	II
Rated Speed, km/hr	40	30
Number of Traffic Lanes	2	2
Width of Roadway in Straight Segments, meters	7	6
Magnitude of Widening of Roadway When Radius of Curving Sectors (in plan) Is:		
300-350 Meters	2.1	2.1
200-250 Meters	2.8	2.8
Maximum Slope, %	5.0	6.0

During construction of the first and second phases of the Punga-Ukhta gas pipeline the quality of winter roads used was low. The roads were laid along existing lanes and trails with a large number of (often unjustified) turns, small (to 30-40 meters) radii in curving segments, large (to 8-9 percent) slopes, and one traffic lane (4.5-5 meters wide) over most of the length. The average operating speed of pipe trucks on these winter roads was not more than 10-15 kilometers an hour.

During construction of the third phase of the line certain segments on one of the roads were straightened out, the roadway was broadened to 10 meters for two-lane traffic, separate lanes were set up, and slopes were reduced to 5-6 percent. This made it possible to increase the traveling speed of pipe trucks to 25 kilometers an hour, raise production, and reduce the number of pipe sections dropped, the number of jams, and the time spent cleaning them up. It cost about 760,000 rubles to improve the winter road, but the reduction in transportation expenditures was 1,790,000 rubles (not counting the reduction in expenditures to pick up dropped sections and to clean up jams).

One of the principal factors holding back improvement in the quality of road and transportation support to the construction of trunk pipelines is the lack of specialized road-transportation subdivisions.

Glavvostoktruboprovodstroy first attempted to set up comprehensive road-transportation columns during construction of the first and second phases of the Punga-Ukhta gas pipelines. These columns included the machinery and equipment of earth moving, welding-installation, and general contracting organizations. Pipe was hauled by vehicle columns of welding-installation trucks. Thus, road-transportation support was entrusted to different specialized organizations which had different levels of interest in the final result of the



work. Conflict situations were often resolved by the headquarters for shipping on the line. The figure below shows the organizational structure of management of road-transportation support.

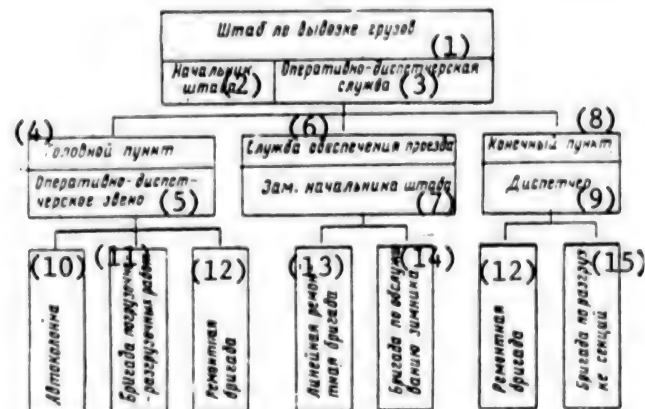


Figure. Organizational Structure of Headquarters for Shipping on the Line.

- |                                  |                                       |
|----------------------------------|---------------------------------------|
| Key: (1) Shipping Headquarters;  | (9) Controller;                       |
| (2) Chief of Staff;              | (10) Vehicle Column;                  |
| (3) Operational Control Service; | (11) Loading-Brigade;                 |
| (4) Entry Point;                 | (12) Repair Brigade;                  |
| (5) Operational Control Element; | (13) Line Repair Brigade;             |
| (6) Passage Support Service;     | (14) Winter Road Maintenance Brigade; |
| (7) Deputy Chief of Staff;       | (15) Pipe Section Unloading Brigade.  |
| (8) Terminal Point;              |                                       |

When pipe sections were hauled in several stages with intermediate storage points, an additional operational service was organized to support the carrying capacity of the road in the next stage. Transport, repair, and housing-convenience services were also set up at the transshipping point by analogy with the entry point.

Glavvostoktruboprovodstroy's formation of comprehensive trusts greatly increased the working efficiency of the road-transportation columns.

The increase in the volume of construction of large-diameter trunk pipelines in the 11th Five-Year Plan and in the length of particular pipeline systems requires an increase in the volume of shipment of pipe and other loads to the lines. For road-transportation support to such very long pipelines it is wise for comprehensive pipeline building trusts and associations to form specialized road-transportation administrations or mobile mechanized columns whose functions should include hauling pipe, weights, and other materials and construction elements for the line with minimum expenditures, the required intensity, and good quality work. In our opinion, these specialized subdivisions should be assigned the following functions: setting up temporary side roads and unloading points for pipe, materials, and equipment; construction of service roads to haul

pipe sections to the line; clearing and grading the roadbed and constructing roads along the line; preparation of intermediate transshipment points and completely constructing routes for transporting loads to the work site; loading and unloading jobs; hauling pipe and materials to the line.

The main production subdivisions of the road-transportation administration should be road-mechanized and mobile motor vehicle columns working with the rights of the brigade (sector) contract. Wages in the subdivisions should be paid according to final output: pipe and materials hauled and turned over to construction-installation organizations.

The formation of specialized administrations or mobile mechanized columns will permit a comprehensive solution to the problems of road-transportation support for trunk pipeline construction and greatly intensify the work.

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CSC: 1829/153



## MOTOR VEHICLE

### CAUSE OF PRODUCTION DELAY AT KRASNOYARSK PLANT CITED

Moscow EKONOMICHESKAYA GAZETA in Russian No 9, Feb 82 p 9

[Article by V. Mikhaylov: "The Troubles of a New Enterprise"]

[Text] Why capacities are being incorporated slowly at the Krasnoyarsk plant of the Ministry of the Automotive Industry.

Work on the plant in Krasnoyarsk began at the same time as construction of the Kama Truck Plant. When it reaches full capacity it will produce 100,000 trailers and semitrailers a year, 180,000 tons of steel and cast iron castings, and 70,000 tons of hot stamped products. Half of the cast pieces are to be delivered on a collaboration basis to other automotive enterprises that manufacture heavy tractor trailers.

The geography of the deliveries is very broad. Siberian cast pieces will go to Frunze, Orsk, Ishim, Balashov, and Penza. Some of the products will be received by the Stavropol' plant which produces trailer equipment for ZIL and Kama trucks. Thus, the Krasnoyarsk plant is becoming one of the leading enterprises of the sector.

Large production buildings have been erected in the time that has passed since that day when the first cubic meters of earth were removed on the brush-covered bank of the Yenisey. A modern plant has arisen which produces trailer equipment without which efficient operation of the Kama Truck Plant would be impossible. The technical passport of the enterprise today includes capacities already built to produce 50,000 trailers and semitrailers, 70,000 tons of steel and cast iron castings, and 45,000 tons of stamped pieces a year.

The pine forest from which the name of the new worker community was taken comes right up to the production building. In 10 years some 300,000 square meters of total housing have been built in addition to several nursery schools and daycare centers, two general educational schools, a polyclinic, and trade and domestic service facilities. The community has a population of 17,000.

Production of truck-trailers began in 1976 while construction of capacities was still underway. Many enterprises, scientific research institutes, and organizations of the sector helped incorporate production. At first cast pieces were delivered from the Kama Truck Plant, but in 1979 the first Siberian

castings were made. Today the plant must not only supply its own needs for cast parts, but also deliver them to other enterprises of the All-Union Soyuzavtopritsep [USSR Vehicle Trailer] Production Association.

So far the Krasnoyarsk plant manufactured more than 50,000 semitraeters for Kama trucks and about 20,000 tons of steel and cast iron castings.

But the capacities that have been built are not being incorporated satisfactorily. Work went slowly last year. The plant produced 5,760 fewer trailers and semitrailers than planned and was 16,500 tons short on cast pieces. Because of this the Balashov and Orsk trailer plants and the Kirgizavtomash [Kirghiz Motor Vehicle] Association failed to fulfill their assignments for production of 2,000 trailers for K-700 and T-150 tractors. This was the result of lagging work at the Krasnoyarsk plant.

Such a situation cannot help but arouse serious concern. The All-Union Soyuzavtopritsep Production Association and the Ministry of Automotive Industry are certainly taking steps to step up the incorporation of capacities that have been introduced and to stabilize the work of the enterprise. They are continuing to help it manufacture and install equipment, recruit skilled workers and adjusters, and work out the tight spots in production. This help is useful, but the delivery of certain parts by associated enterprises still must be improved.

Unfortunately, the steel casting shop simply cannot keep up. Specialists have concluded that the main reason for its chronic backwardness is a lack of engineering-technical personnel and workers trained to work on complex automatic equipment, in particular on the three moulding lines.

About half of the fitter-adjusters employed on the lines went through on-the-job training at the Gor'kiy Automotive Plant and other enterprises of the sector. But many of these trained workers later left the shop. Difficulties in filling the staff have been aggravated by high transience. Some 100 workers were discharged last year. One moulding division is short 200 persons to operate the automatic lines. Transience is high among specialists. Last year 12 engineers and technicians were discharged, including a shop chief and the heads of important sectors and other subdivisions.

There is no question that the plant directors could do much more to staff the casting production division. At the same time, the shortage of housing makes it hard to keep employees. In the last three years the plant has received more than 10,000 square meters of housing less than planned from the construction administration. This year the construction administration has been assigned to put only 23,000 square meters of housing into use, whereas the 11th Five-Year Plan envisioned 30,000 square meters annually.

The procedure adopted here where a shop is launched in separate stages has also had a negative impact on incorporation of casting capacities. Following this procedure the melting, charge, mix preparation, and heat-cutting divisions were accepted for operation before technological and transportation equipment were fully installed. The All-Union Soyuzavtopritsep Production

Association permitted a shop to be launched before the systems for removal of waste and hydraulic slag, ventilation, and lighting were completed.

The problems were aggravated by a number of miscalculations and mistakes made by the designers of Giproavtoprom [State Institute for Planning Automotive Industry Plants] (director is V. Ustinov). For example, the system for removing exhaust gases from the electric furnaces while the charge is being loaded and during the melting process proved completely inefficient even when only half the units were in operation. New technical concepts have now been proposed. To carry them out requires additional expenditures of materials, money, and time.

Another design error was choosing an incorrect width for the working band of the apron conveyors that transport the cast pieces.

Another important reason for the unsatisfactory work of the casting facility is the low level of preventive inspection and scheduled maintenance work on the complex equipment. The production of spare parts had not been properly organized either.

The system of labor organization and wages originally introduced did not take into account the specific features of large-scale highly automated steel casting production. It did not give employees an incentive to increase the production of usable cast products and incorporate introduced capacities quickly.

Certain steps have now been taken to correct the situation. Specifically, comprehensive start-to-finish brigades have been formed. They include casting workers, repair workers, and engineering-technical personnel. The wages system has been restructured. Repair facilities are being strengthened and the provision of spare parts for equipment is improving.

In recent months the plant increased the production of output, somewhat reduced defective products and the prime cost of cast products, and labor discipline has been strengthened. But the lag has not been completely overcome. The Ministry of Automotive Industry and the All-Union Soyuzavtopritsep Production Association must study the situation and give the enterprise more effective help. The Krasnoyarsk Railroad must make more flatcars available for shipping the trailers.

In 1982 the plant is supposed to manufacture 21,000 semitrailers and 1,000 trailers, and produce 10,000 tons of steel and 6,500 tons of cast iron cast products. The production capacities that have been built are entirely adequate for this.

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CSO: 1829/158

## RAILROAD

### NEW MEANS OF MEASURING TRANSPORTATION OUTPUT ADVOCATED

Moscow PRAVDA in Russian 13 Jan 82 p 2

[Article by Yu. Nikol'skiy, chief of the Transportation Department in the Main Administration of Reclamation in the Non-Chernozem Zone, subordinate to the USSR Ministry of Land Reclamation and Water Resources: "Incompleteness on Wheels. What Should Be Considered As Transportation Output? Another Discussion About Ton-Kilometers. Trains Must Run Faster."]

[Text] --Moscow--Railroad transportation in our country does an enormous amount of work. Suffice it to say that more than 10 million tons of freight for the national economy and approximately 10 million passengers are conveyed each day by rail. The volume of transport and its distance are constantly increasing.

But, let's try to avoid giving in to the magic of large figures. After all, the 26th CPSU Congress assigned to the transportation branches the task of satisfying the national economy's and the populace's transport needs fully and in a timely manner, and increasing the efficiency and quality of the transportation system's operation.

In resolving this important task, a considerable role must be played by a correctly defined guideline--an index of clear-cut significant final results. Such an index would be able to more objectively express the results of the transport workers' efforts and the efficiency of their work as a quantity of output produced per unit of time.

But what should be considered as transportation output?

I will begin with some examples. At the end of 1981, 13 tank cars filled with industrial fuel oil arrived at the Novgorod Reinforced Concrete Products Plant. It would appear that the railroad had fulfilled its obligation, since the cargo was delivered to the destination by a large group of freight cars, which is even being encouraged now. But what was the economic impact? The amount of fuel oil delivered was 800 tons, which is a 3-month quota for the plant. The fuel oil should have arrived evenly, at the rate of one tank car per week. But there had not been any fuel oil deliveries for a long time. To prevent the plant from stopping operations, its managers sought out the local possibilities and borrowed fuel oil from neighboring plants. Of course, there were stoppages at the plant. Suddenly, the long-awaited shipment arrived, all at once. Just try

to unload the fuel oil, where can it be stored? The plant does not have enough storage tanks. As a result, the last tank cars were freed for other loads only after a month.

The same situation occurs with cement deliveries at reinforced concrete products plants, subordinate to the Main Administration of Reclamation in the Non-Chernozem Zone. First, cement is not delivered for weeks at a time, then it arrives in large groups of freight cars which become warehouses on wheels. Of course, the tens of thousands of rubles in fines for freight car idleness are not the only losses. The main loss is that a freight car is not returned for its next load of cargo for a long time.

Undoubtedly, the railroad comes out the loser, since its basic resources are standing idle. But the basic planning indicator for railroads which is currently in use--freight turnover with the ton-kilometer as its unit of measurement--does not take this loss into account, since the concept of transportation's finished output does not include the final element--unloading.

Karl Marx defined transportation as the fourth branch of material production. Consequently, transportation's output is cargo. But can we consider what is now defined by the concept of "freight turnover" to be cargo or transportation finished output? For a ton-kilometer is the product of two factors, freight mass and distance, and expresses the purely physical sense of work, as does a kilogram-meter, for instance. But a ton-kilometer cannot be finished output or the basic transportation index. A ton-kilometer is like a house under construction, when the walls have been laid out, but there is no roof. In other words, it is the most commonplace "incompletion" on wheels.

I think that the concept of transportation's finished output and basic index must certainly include the final aim, which is to unload cargo at the destination or convey people for passenger transport. And all this must be accomplished within a time frame determined by transport conditions. In my opinion, the concept of "conveyance", which includes the entire transport cycle from loading to unloading, should replace the ton-kilometer as the designator of transportation output and its basic planning index. The first unit of measurement should be a monetary expression (wholesale price) of transportation output sold, for passenger and freight transport. The second unit of measurement should be tons for freight transport and numbers of passengers for passenger transport.

When this proposed index is introduced, the types of transportation output and its component parts will be precisely delimited. To offer an analogy with production organization at an industrial enterprise, all transport which completes unloading on main lines would be like finished output of an assembly shop. Output, depending on what it is earmarked for, can be sold or used for the internal needs of a branch of industry.

Gross output of transportation and standard net output, as a component part of gross output, are also simply defined, as a whole.

Transport's commodity output is also completed output, but is distinct from output which excludes unloading.



We can view our comparison and view stations, repair shops, track maintenance sections and railroad divisions with all their production facilities as being similar to industrial sections which produce assemblies and parts for an assembly shop. The output of these subdivisions (loading, unloading, forming and dispatching of trains, maintenance, processing of freight and containers) will be the final component of basic transportation output.

I think that transport documents should become the primary accounting document during the transport process, for transportation output. The waybill could be presented for registration only after the customer had returned the unloaded car to the railroad. Necessary information, including tons and kilometers, will be taken into account in the engineer's work sheet, but no longer as the basic index of transportation production. Such information will be a means of accounting for the amount of work performed on a given section of track in conveying freight (or passengers). It will also help determine labor and material expenditures which occurred while carrying out one element of transportation's production process. Under such conditions, the ton-kilometer will undoubtedly remain among the active measurements. But at the same time, a complexity and equipment coefficient must be introduced, since the net cost of a ton-kilometer varies on different sections of track.

I will explain with an example. Each section of track has its own characteristics, which are reflected in the traffic schedule. These include the complexity of the tracks' vertical alignment and the section's technical equipment. Based on these factors, a weight standard, train length, average speed between stops, schedule speed, expenditures of electrical power and diesel fuel, a wage fund and other norms are established. But if one section is accepted as the standard, then to accomplish the same amount of work, another section with a more difficult track alignment and less equipment, for example, will need to expend more labor and material resources, in the amount allowed for by the complexity and equipment coefficient.

It seems to me that introducing a new definition of transportation output should entail a number of other organizational improvements of the transportation system. I will designate the main improvements. Freight turnover and its unit of measurement, the ton-kilometer, introduced into transportation science and later, into planning and economic organs its "twin", the concept of "transportation expenses". And so, millions of workers and specialists in transportation branches turned out to be, as it were, the producers of these expenses. During the last decade, the increase in train speeds, the commanding factor in scientific, technical and economic progress, almost ceased. Losses from this are enormous and they cannot be recouped, even to a small extent, by using heavy and long trains, nor by increasing the percentage of freight sent on through trains. Freight delivery times have increased considerably and the average car is more infrequently being loaded with freight.

At the end of last year, cars with freight from Kiev arrived at the "Fregat" ["Frigate"] Plant in Pervomaysk (Nikolayev Oblast). It took the train 45 days to cover a distance of approximately 500 kilometers. At the most leisurely pace, 2 or 3 days should have been sufficient for that distance. Due to this delay, as well as the fact that products which completed sets were also not

shipped from other plants, the Pervomaysk plant could not deliver needed equipment on time to water resources construction projects.

That is a typical example. Swift and decisive measures are needed so that the railroads, those arteries of the national economy, do not have constricted circulation and blood clots.

First of all, we must get down to eliminating the imbalance between the national economy's needs and transportation capabilities. We must finally make it a rule that a car should wait for freight and not vice versa.

As is shown by the practice of economic interrelations between railroad employees and freight car users, it is time to reconsider the system of fines for enterprises and their managers responsible for car idleness. Even now we can confirm that such a system has caused considerable damage to the national economy. First and foremost, the damage has resulted from unrealistic time norms, unfounded both technically and juridically, for loading and unloading cars. And that is not all. Negligence in drawing up agreements (between the railroad and a client) and a liberal interpretation by railroad employees of paragraphs in the railroad regulations relating to specific situations put practically no limits on the railroad employees' right to impose monetary sanctions on enterprises.

But most unsightly are the millions of tons of freight which are ruined during hasty unloading operations and the thousands of tons of freight which remain in cars which have supposedly been freed for other cargo. And how many tons are not loaded into cars, just to avoid exceeding the norm for car idleness?

After a car has done its work, it is unloaded and is counted as being idle, for inventory-keeping purposes. Then the railroad employees precisely add fines to the enterprise's account. Of course, this is not a business-like way of doing things, unless one considers only narrow departmental interests.

In my view, we need legislation to task institutes which are competent in these matters to develop realistic norms for loading and unloading cars. We must forbid the practice of sending to a recipient all at once more cars for delivery than were agreed upon in the contract. Cars must be provided evenly and on time.

And there is one more important problem. As is well known, the production process for transport begins when output leaves the assembly shop and ends when freight is unloaded on spur tracks. That means that expenditures connected with loading and unloading must be taken into account fully in the cost expression for transported goods and in transportation output, regardless of which department produced these expenditures. This part of the revenue must be deducted for developing and re-equipping transportation shops and enterprises of industrial transportation. This will help industrial railroad transportation more quickly become a real blood brother of main line transportation.

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CSO: 1829/141



## RAILROAD

### DEFECTIVE MEASURING DEVICES

Moscow EKONOMICHESKAYA GAZETA in Russian No 4, Jan 82 p 4

[Article by Yu. Marchenko, deputy chief of the Electric Locomotive Operations Department at the Novocherkassk Electric Locomotive Construction Plant: "It May Be Worthless, But At Least It Is Stylish. Extravagance Under the Guise of Technical Progress"]

[Text] --Novocherkassk--In competing for greater savings, our workers are striving to reduce expenditures of material resources during both manufacture and operation of electric locomotives produced by them. But there is a reserve which the Ministry of Railways cannot bring into action without the customer's aid.

For 20 years, inexpensive induction meters, which are very simple in design and reliable in operation served on main line locomotives to register electric power expended by the locomotives. But then the Novocherkassk Institute for Electric Locomotive Construction (VEINII), where machines are designed according to orders from the Ministry of Railways, the idea arose to install a special meter, of necessity electronic, on new locomotives. The Vilnius Electric Measuring Equipment Plant helped implement this idea.

We can say that the F-440 electronic meter, which was designed and put into batch production, has staggering economic indicators, compared to its inductive predecessor. Whereas all the materials and parts in the out-of-style device weigh slightly more than a kilogram and the meter needs less than 2 watts of power from the power-supply system, the electronic meter weighs 5 kilograms and needs 25 watts from the system. As a result of such technical progress, the price of the meter went from 5 rubles and some odd kopecks to 150 rubles.

In addition, the new meter, which is a complex device, is very unreliable in operation. The Ministry of Railways was compelled to turn the attention of the Ministry of Instrument Making, Automation Equipment and Control Systems to the fact that more than half of the F-440 instruments were practically not working under operational conditions. Many locomotive repair depots, as well as maintenance plants, are refusing to install these meters on electric rolling stock.

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CSO: 1829/142

## RAILROAD

### BRIEFS

**NEW SUBWAY CARS--**The subway passengers were prepared to board, but the train proceeded past them. They caught a brief glimpse of a sign on the cars: "trial runs." New "I" type cars are being broken in on the Moscow subway's circular line. Each year, there are more passengers on the subway. The transportation problem can be successfully resolved by increasing the speed on subway main lines and increasing the capacity of cars. The designers who created the "I" type car set these goals for themselves. The speed of a train with these cars has been increased to 100 kilometers per hour. The car has a hexagonal shape which allowed the passenger area to be considerably enlarged. The seats are built into the walls and the aisle has been cleared. An additional 25 passengers can be accommodated in the new car. It "reposes" on vulcanized rubber pneumatic springs. Such a joining of body with wheels has its advantages: the car brakes more smoothly and noise is considerably reduced. A new ventilation system has been introduced. The body is made of aluminum alloys and the car weighs 10 tons less than its predecessors. The train is equipped with a special device which allows part of the electric power to return to the power-supply system. The new car has one other advantage: it gathers speed almost immediately and expends much less time in braking. This year it will be possible to evaluate all the merits of the new subway train, when operational testing begins on the Moscow subway's circular line. [By A. David'yants] [Text] [Moscow NEDELYA in Russian No 1, Jan 82 p 6] 9887

**REPAIR FACILITY UPGRADED--**The technical base of the Kanash locomotive repair shop is not well developed now. But when the new shop goes into operation, the workers at the enterprise will expand their maintenance program. Auxiliary sections are now being equipped to put the functioning 2TE20L, 2TE20B and 3TE20M diesel engines of the TR-2 [Current Maintenance-2] maintenance shop into operation. [Excerpt] [Moscow GUDOK in Russian 3 Feb 82 p 2] 9887

**TUNNEL PROGRESS NOTED--**In the Buryat ASSR, the BAM [Baykal-Amur Main Line] tunnelers have advanced more than 2 kilometers from the eastern side of the Severomuyskiy Tunnel, which is the country's longest tunnel. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 4, Jan 82 p 3] 9887

**SUBWAY TUNNEL COMPLETED--**Subway workers have finished the service tunnel opening the track to the new "Inshaatchylar" ("Builders") Station on the Baku subway. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 6, Feb 82 p 3] 9887

**TASHKENT SUBWAY EXPANDS**--Tashkent--Laying a new radius of subway track has begun in the capital of Uzbekistan. The 12 kilometer route will traverse the old quarters of the city and new housing areas. It will come out near the Karakamysh industrial area. A few days ago, the first meters were dug for the tunnel which begins at the Navoi transfer station. Tunneling work is being conducted on this section of track entirely underground so as not to disturb a lively thoroughfare--Navoi Avenue. The new radius will be a continuation of the Tashkent subway's second line, which is being laid from the Navoi Station to the railroad station and which will be 20 kilometers in length. [Text] [Moscow GUDOK in Russian 29 Jan 82 p 4] 9887

**METHOD FOR CLEANING CARS**--Moscow--During the winter, more time is usually spent repairing rail cars than during the spring or summer. After all, first the ice and frozen snow must be cleaned off the roof of the car. It takes several hours for a crust of ice to melt and then the remaining ice is scraped off manually. At the Riga Freight Car Repair Depot, it was proposed that an AI-20 aircraft engine, which had expended its service life, be used to clean ice from cars prior to repair. This operation now takes only 30 to 40 seconds. The aircraft engine is installed on a metal gantry so that its exhaust nozzle is directly above the roof of a car placed under the gantry. The engine is remote-controlled. A powerful blast of hot air melts the crust of ice, blows off dirt and simultaneously dries the car. At the USSR VDNKH [Exhibition of Achievements of the National Economy] there was a recent exhibit "Ground Application of Aircraft Engines in the National Economy", where a model of a heat generator, so far the only one in the country, was exhibited. [By L. Khlopkova] [Text] [Moscow GUDOK in Russian 7 Feb 82 p 2] 9887

**RAILROAD ELECTRIFICATION**--With regard to our correspondent's article entitled "Time is Flying", published on 24 December 1981, I. Korbakov, chief of the Main Administration of Railroad Electrification in the Ministry of Transport Construction, informed us that a intense situation with trains has taken shape on the Far Eastern Railroad during the entire construction period. This could not fail to have an impact on the work of the builders and electricians who are electrifying the Bira-Arkhara section of track. At present, the builders, electricians and Far Eastern Railroad workers have developed and are implementing measures to increase the power and total conversion of the Bira-Arkhara section to electric traction. [Text] [Moscow GUDOK in Russian 28 Jan 82] 9887

**NEW SUBWAY PROJECTS**--Specialists at the Moscow institute "Metrogiprotrans" [State Planning and Surveying Institute for the Construction of Subways and Transportation Facilities] have completed the feasibility study for building the first subway section in Rostov-na-Donu. In commenting upon this fact, the Ministry of Railways emphasized that the current 5-Year Plan gives the green light to a number of new subways in the nation. Specific preparations will begin for constructing the lines, which will go into operation in the more distant future. For example, the planning documents for the subway in Rostov-na-Donu are being developed at the same time as similar plans for Omsk, Perm, Chelyabinsk, Alma-Ata and Riga. The subway in the Belorussian capital, Minsk, will carry its first passengers in 1984. During the final year of the 5-Year

Plan, an 8-kilometer subway in Gor'kiy will go into operation. The final stage of work is at hand for the builders of the Novosibirsk subway and subway builders in Sverdlovsk, Kuybyshev and Dnepropetrovsk are facing particularly intensive work during this period. The length of the Leningrad subway's lines will increase by almost 15 kilometers and new subway sections will go into operation in Kiev, Tbilisi, Baku, Khar'kov, Tashkent and Yerevan. The length of the high-speed subway main lines in Moscow will increase by 30 kilometers. Overall for the country during the 5-year period, more than 100 additional kilometers of subway lines will go into operation, which is about one-third of the subways' total length at present. (TASS) [Text] [Moscow GODUK in Russian 28 Jan 82 p 1] 9887

URBAN SUBWAY SYSTEMS—Reader V. Zolotov of Kondopoga asks: "What cities in our country have built subway systems?" At the present time eight cities in our country have subway systems. They are Moscow, Leningrad, Kiev, Tbilisi, Baku, Khar'kov, Tashkent, and Yerevan. The newest system, in Yerevan, opened in February of last year. Subway systems are under construction today in six more cities. In three of them, Minsk, Gor'kiy, and Novosibirsk, the first lines will be opened during this five-year plan, while in Kuybyshev, Sverdlovsk, and Dnepropetrovsk they will open in the 12th Five-Year Plan. Construction of subway systems is also projected for the cities of Riga, Rostov-na-Donu, Alma-Ata, Omsk, Chelyabinsk, Perm', Donetsk, Ufa, and Odessa. [Text] [Moscow TRUD in Russian 6 Feb 82 p 4] 11176

FAR EASTERN RAILROAD—Khabarovsk—The traveling speed of trains on the Far Eastern Railroads has increased. The 200-kilometer segment from Bira to Arkhara has been switched to electric traction. Now the entire route from Khabarovsk to Arkhara Station in Amurskaya Oblast has been electrified, making it possible to speed up the delivery of freight to stations under construction on the Baikal-Amur Mainline and to industrial enterprises in the Amur region and to move transit freight through from Far Eastern ports more rapidly. Electricity from the Zeyskaya GES and powerful electric locomotives have made it possible to increase the weight of each train to 6,000 tons. The heavy trains arrive in Khabarovsk 4-5 hours faster than before. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 12 Jan 82 p 1] 11176

BAM SECTOR IMPROVED—Berkakit. The average train speed on the Tynda-Berkakit line has been raised to 60-70 kilometers an hour, 50 percent faster than it was in the recent past. Speeding up train traffic and the high rate of car turnaround are producing a major economic impact and reducing the prime cost of shipping. This line is a complex sector of the Baikal-Amur Mainline. It runs over the high mountain slopes of the Stanovoy Range and has sharp turns and long climbs and descents. There is permafrost under the top layer of the mar' (larch peat) bogs, and in the summer it thaws and threatens to undermine the foundation of the roadbed. But the workers of the Berkakit section of track were able to put the steel road in excellent condition. The backbone of the collective of track workers is made up of members of the all-Union Komsomol detachment of railroad workers. The flow of freight to Southern Yakutiya, where projects of the territorial production complex are under construction, will increase sharply this year. And an increasing amount of Neryungri coal will go from there to the industrial centers of the country. [Text] [Moscow GUDOK in Russian 13 Mar 82 p 1] 11176



TRANSBAIKAL ROAD WORK—Svobodnyy—Work has begun on the Svobodnyy section of the Transbaikal Railroad to electrify the 1,788-kilometer segment from Karymskaya to Arkhara. The first towers have been installed between Zhurvali and Arkhara. Train controller Yu. Boklin and Zhuravli station operator L. Karaseva organized train traffic on the run skillfully and precisely. Despite a four-hour interruption in traffic, the assignment for transferring trains to the Far Eastern Road and receiving trains was fulfilled. Construction workers face a large volume of work. The total cost of the work, not counting associated jobs, will be more than 556 million rubles. They must build 40 traction substations and set up the same number of segments of the contact grid as well as power supply sectors at the Chernyshevsk-Zabaykal'skiy, Yerofey Pavlovich, Magdagachi, and Zavitaya stations. They are to build 172,000 square meters of housing and nursery schools, daycare centers, and regular schools. [By V. Sorokin] [Text] [Moscow GUDOK in Russian 14 Mar 82 p 2] 11176

NEW ELECTRIFIED SEGMENT—Orenburg—The first electric train has left the city terminal. A 200-kilometer electrified segment of the road from Kuvandyk to Orenburg has been launched. Starting today electric trains from here will make regular trips all the way to Chelyabinsk, where they transfer to the Transsiberian Electrified Line. The photograph [not reproduced] shows the train leaving Orenburg station. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 8, Feb 82 p 3] 11176

PROGRESS ON BAM—Regular passenger traffic has begun on the final 136-kilometer run from Urgal to Eterkan. Passenger trains now travel the entire Eastern Sector of BAM. The segment of the Baikal-Amur Mainline from Tynda to Dipkun, a distance of more than 130 kilometers, has been accepted for temporary operations. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 2, Jan 82 p 3] 11176

NOVOSIBIRSK SUBWAY—Novosibirsk—The representatives of a new occupation in Novosibirsk, subway builders, have passed an important test with distinction. G. Sunyaykin's brigade completed excavation of the first underground run from the center of the city to the industrial Oktyabr'skiy Rayon 10 days ahead of schedule. The use of a mechanized excavation rig designed by Ukrainian machine builders made it possible to speed up the construction of this tunnel, almost one kilometer long. The entire country is helping the Novosibirsk subway builders. The people of Tashkent sent a group of experienced workers and engineers, and Moscow architects took part in developing the interior of the stations. People from Khar'kov organized a school of progressive know-how for the Novosibirsk construction workers. [Text] [Moscow GUDOK in Russian 18 Feb 82 p 1] 11176

CSO: 1829

## OCEAN AND RIVER

### MAJOR TASKS OF RIVER TRANSPORTATION IN 1981-1985 VIEWED

Moscow RECHNOY TRANSPORT in Russian No 1, Jan 82 pp 2-4

[Article by Yu. Pochayev, deputy chief of the subdivision of transportation of USSR Gosplan, candidate of technical sciences: "River Transportation in the 11th Five-Year Plan"]

[Text] The document "Basic Directions of Economic and Social Development of the USSR in 1981-1985 and During the Period Until 1990" indicates that the principal challenge for transportation in the 11th Five-Year Plan is to meet the needs of the economy and the population for conveyance fully and on time and to raise the efficiency and quality of work by the transportation system. To meet this challenge in river transportation, plans envision a significant further strengthening of the material-technical base, above all to support freight shipping in Siberia, the Far East, and the Far North, transferring as much freight shipping as possible from rail to river transportation where this is expedient, and extending the navigation season on main waterways.

Concrete measures to meet the challenges placed before river transportation were set out in the decree of the CPSU Central Committee and USSR Council of Ministers entitled "Measures To Develop River Transportation in 1981-1985."

For river transportation workers the 10th Five-Year Plan was a time of significant strengthening of the material-technical base. During the years 1976-1980 new cargo-handling capacities were introduced in Osetrovo, Lesosibirsk, Nizhnevartovsk, Khabarovsk, Pechora, Astrakhan', Zaporozh'ye, Dnepropetrovsk, Kremenchug, Pavlodar, Rybachiy, and other ports. Construction was begun on mechanized docks for general-purpose supply depots at these shipping points of Western Siberia: Labytnangi, Sergino, Nizhnevartovsk, Nadym, and Urengoy. The launching of these capacities will create conditions to significantly accelerate the processing of cargo ships of the Irtysh and West Siberian steamship companies.

The industrial enterprises of river transportation received development: the Balakovo, Limend, Belogorodok, Cherepovets, and Gorodets shipyards and the Leningrad, Blagoveshchensk, and Chaykovsky fleet repair and operations bases.

Navigation conditions on waterways were improved significantly. A new lock was put into operation on the Dnepr hydroengineering complex, construction was begun

on the second stage of the lock at the Sheksna hydroengineering complex, and the White Sea-Baltic shipping canal is being reconstructed.

In the 10th Five-Year Plan shipbuilders supplied the river transportation system with cargo transport ships with a total load capacity of 3.3 million tons and tugs and pushboats with a total power output of about 370,000 kilowatts. The new additions to the fleet include large dry-cargo diesel ships and tankers, powerful tug-pushboats, barges for large-cargo caravans, vessels for mixed river-sea navigation, and modern diesel passenger ships.

River transportation focused its attention on the river basins of Siberia and the Far East. The volume of shipping for the petroleum and gas extraction regions of Tyumenskaya and Tomskaya oblasts rose 60 percent in the five years, reaching 16.4 million tons in 1980. Shipping for the northern regions of the Yakutskaya ASSR and Irkutskaya Oblast with transshipment through the port of Osetrovo increased 15 percent. The workers of the East Siberian, Lena Unified, and Amur steamship companies deliver about 1 million tons of cargo each year for the construction workers on the BAM project.

At the same time, we must note serious shortcomings and unused reserves in river transportation which prevented us from fulfilling the five-year plan for cargo turnover and economic indicators in shipping during the last five-year plan.

Above all we should point out the inadequate development of shipping in direct, mixed rail-water transportation. The volume of this shipping did not increase at all between 1975 and 1980; it actually decreased from 68.2 million tons to 65 million tons, including from 50 to 46.5 million tons for the RSFSR Ministry of the River Fleet. But there are real opportunities to develop mixed shipping. On the one hand, there are reserves of traffic capacity on internal waterways, including the central river basins. On the other hand, we have the national economic efficiency of this shipping, which finds expression in lower transportation costs and freeing railroad rolling stock. According to figures from TsNIIIEVT [Central Scientific Research Institute of Economics and Operation of Water Transportation], the volume of freight shipping that could well be moved to mixed rail-water transportation is about 60 million tons a year now and continues to grow.

A second major area for mobilizing existing reserves is improving use of the fleet. The situation here was practically unchanged in the 10th Five-Year Plan, and for some aspects even became worse. For example, in the years 1976-1980 for the RSFSR Ministry of the River Fleet the proportion of running time in the total balance of the operations period for diesel freighters dropped from 50.1 to 47.1 percent, including from 38.2 to 35.8 percent for ships under load. At the same time the downtime of diesel freighters waiting for loading and unloading increased from 11.4 to 11.9 percent. The results were similar for the tug fleet working with dry cargo ships: the proportion of running time declined from 69.8 to 63.7 percent, including from 34 to 32.7 percent with loaded caravans. For this same type of ship the proportion of downtime waiting for the caravan to be made up increased from 14 to 15.5 percent. Downtime for what were called other reasons increased for all types of vessels: from 8.4 to 9.6 percent for



diesel freighters; from 6.4 to 6.7 percent for non-self-propelled dry cargo ships; and, from 4 to 4.5 percent for tug-pushboats.

The unfavorable trend in the structure of the operating time of the river fleet must receive fixed attention from the operations services of the steamship companies, the RSFSR Ministry of the River Fleet, and the Union republic river transportation management agencies in order to fundamentally improve the organization of shipping and increase the accountability of all elements of the transportation process for speeding up the turnaround time of river vessels.

An equally important reserve to raise the work efficiency of river transportation is fuller use of the days of the navigation season by intensive work in the early spring and late fall periods. As statistics show, in recent years the volume of shipping of hard coal, timber, ore, and petroleum products in bulk in October and November has been 25-30 percent lower than in April and May in such major rivers steamships companies as Volga Unified, Northwest, and Volga Tanker. This occurs even though the time of fleet work is practically the same. The only explanation for this is that late in the navigation season losses of carrying capacity are permitted because there is uncertainty about the time when shipping must stop, although modern technical equipment makes it possible to largely avoid the risk of being iced in en route. It follows from this that the meaning of solving the problem of extending the navigation season is above all to guarantee that cargo will be delivered, which will make it possible to operate on the basis of guaranteed ship departure and arrival times. This is a significant reserve. According to rough calculations the additional cargo turnover could be 10-12 billion ton-kilometers.

There are also other possibilities for raising the efficiency of river transportation work. There are also reserves for improving management of fleet traffic, especially in the steamship companies of the adjacent European basins, and for rationalizing cargo flows and raising the quality of ship repair.

The level and trend of indicators of the working efficiency of river transportation cause particular alarm. Labor productivity in shipping as a whole for river transportation rose just six percent in 1976-1980, instead of the planned 20 percent. The growth in cargo turnover through increase in labor productivity was 50 percent in the 10th Five-Year Plan.

The prime cost of shipping is a crucial indicator of the efficiency of river transportation work. Instead of a planned decrease of one percent over the five years, the prime cost of shipping actually rose 10 percent, which corresponds to a loss of about 80 million rubles of profit.

In order to establish a solid foundation for building up the pace of shipping and raising the efficiency of river transportation work in the 11th Five-Year Plan, the plan envisions greater capital investment and replacement of material resources than in the last five-year plan.

For 1981-1985 as a whole river transportation is being allocated 3.7 billion rubles of capital investment, 26 percent more than in the 10th Five-Year Plan.

This figure includes 376 million rubles for construction-installation work, which is up 23 percent. The capital construction plan envisions an improvement in the structure of capital investment. Investment in the development of port facilities will be 50 percent greater than in the 10th Five-Year Plan, which will somewhat mitigate the existing disproportion between fleet carrying capacity and port carrying capacity. For reconstruction and expansion of existing enterprises 25 percent more capital investment is being appropriated than was actually incorporated in 1977-1980.

In view of the exceptional importance of river transportation for developing the natural resources of the eastern regions of our country, a significant part of the capital investment being appropriated (about 45 percent) is designated for development of the material-technical base of the river basins located in Siberia and the Far East.

In the 11th Five-Year Plan a great deal of attention is being given to building housing for river transportation workers. The growth in volume of capital construction will require a significant bolstering of river transportation's own construction base and an increase in the capacities of construction organizations, above all of Podvodrechstroy [Moscow Administration of Underwater Technical and Construction Work].

During the five years at least 6.4 kilometers of mechanized docks must be put into use. Among them are the port on the Svir' River and mechanized docks and loading-unloading complexes in Komsomol'sk-na-Amure, Kotl. Osetrovo, Krasnoyarsk, Tomsk, Kherson, Pavlodar, Ust'-Kamenogorsk, Naberezhnyye Chelny, and other river ports. Construction will be begun on ports in Kalyazin and Temryuk and a reloading complex in Kambaraka; plans envision expanding Yakutsk and numerous other ports. About 140 kilometers of rail sidings to transshipment points are to be built to increase the carrying capacity of these ports.

Questions related to carrying out the program of construction, expansion, and reconstruction of departmental mechanized river docks in the present five-year plan deserve considerable attention. Raising the efficiency and quality of shipping and achieving the planned level of satisfaction of national economic shipping needs by river transportation depend largely on carrying out this program. During the 11th Five-Year Plan about eight kilometers of new departmental docks must be built, roughly half of them in basins of Siberia and the Far East.

The steamship companies and other river transportation enterprises will receive a large number of contemporary transportation vessels. The addition to the self-propelled dry-cargo fleet will be 840,000 tons, while for tankers it will be 208,000 tons, for non-self-propelled dry-cargo ships — 2.7 million tons, non-self-propelled tankers — 133,000 tons, and for tug-pushboats total power output of new ships will be more than 350,000 kilowatts. Compared with the preceding five-year plan the volume of new self-propelled dry-cargo ships will increase by 17 percent and non-self-propelled dry-cargo ships by 38 percent. The level of addition of new tugs will remain at the level of the 10th Five-Year Plan, while for tanker tonnage (self-propelled and non-self-propelled)

deliveries of new equipment will decline, which is owing to the decrease in need for this type of ship.

Deliveries will continue of the 5,000-ton diesel freighters, the 2,700-ton petroleum and ore carriers, and the 3,000-ton mixed river-sea ships, all of which have proven themselves in practice. At the same time vessels which are new to river transportation will be delivered, such as 11,500-ton caravan-type diesel freighters, 2,100-ton mixed river-sea vessels with ice-protective reinforcement for navigation conditions in the Ob'-Taz Bay, 650/1,300-ton vegetable carriers, 1,030-kilowatt tug-pushboats, and 2,500-ton non-self-propelled vessels for the Lena basin which will be assembled at yards of the RSFSR Ministry of the River Fleet. Series of water-displacing passenger ships from East Germany and Czechoslovakia will continue to be delivered.

The collectives of river transportation industrial enterprises have a special role to play in fulfilling deliveries of ships. Thus, in 1981-1985 shipyards of the RSFSR Ministry of the River Fleet should build almost 40 percent more dry-cargo barges than in the 10th Five-Year Plan, 17 percent more tug-pushboats, and 30 percent more floating cranes.

It should be emphasized that the development of shipbuilding at shipyards of the RSFSR Ministry of the River Fleet, and also at river transportation enterprises of the Ukraine, Belorussia, and other Union republics, must be carried on under conditions of steadily increasing volumes of ship repair work.

The material base of the shipbuilding and repair industry of river transportation is to be strengthened. Plans call for building the Tara fleet repair and operations base and the fleet repair and operations base imeni M. I. Kalinin, plus completion of construction on the Bor shipyard, the Osetrovo and Malyshev fleet repair and operations bases, and other enterprises. Construction of shipyards will be begun in Volgorechensk and Svetlyy.

The objective of further strengthening the material-technical base of river transportation is to support an increase of 19 percent in cargo turnover during the five years, including 25-27 percent in steamship companies of Siberia and the Far East. The volume of shipping by river transportation for the petroleum and gas extraction regions of Tyumenskaya and Tomskaya oblasts should increase 30 percent to 22 million tons in 1985. This is the level of cargo shipment by river that these regions need.

River transportation has been given the job of partially relieving railroads on lines that run parallel to internal waterways. To achieve this it is contemplated that 30-40 million tons of freight will be transferred, where expedient, from rail to river transportation. The river transportation system of the Russian Federation alone should receive more than 8 million tons of petroleum products, about 6 million tons of hard coal, and more than 2 million tons of lumber from the railroads in the five years.

In 1985 the volume of shipping of apatite concentrate by river transportation with transshipment from rail at the port of Medvezh'yegorsk is to rise to 1.2 million tons, while for potassium fertilizer from the upper reaches of the Kama it should rise to 1.3 million tons.

Russian River transportation workers have been given an assignment for the 1985 navigation season, shipping 425,000 tons of vegetables and melons. To accomplish this task it is necessary, in addition to adding specialized vegetable carriers to the fleet, for cargo shippers to build mechanized docks to load the ships at river points in Astrakhanskaya and Volgogradskaya oblasts.

One of the key problems that river transportation must solve in the 11th Five-Year Plan is increasing the volume of grain shipment to 8.5 million tons, including 7 million tons for the RSFSR Ministry of the River Fleet. To carry out this assignment special attention must be devoted to speeding up the processing of ships at grain loading and unloading points, significantly improving the equipment of docks at the most important river grain shipping points in the oblasts of the Volga and Upper Irtysh regions, and increasing the capacities of receiving elevators in the central and northwestern parts of the country.

Route operations workers face difficult jobs to develop the small rivers of Western Siberia in order to organize regular navigation on them and in excavating the bars of the northern rivers in order to make possible direct shipment of cargo to its destination without transshipment.

In recent years the river fleet has received six large icebreakers. Six more will be delivered, but they will have a smaller draft. A series of diesel freighters capable of operating in pack ice has been ordered for work in the Ob'-Taz Bay. It is essential to extend the navigation season on the main river routes in order to increase the carrying capacity of the transportation fleet and receive a return from the capital invested in building icebreakers and other ice-breaking ships.

An important factor in further development of shipping is improving the organization of cooperative work between maritime and river transportation during mixed shipping. Some useful experience has been gained in this work, for example shipping cargo from maritime ports in river vessels, receiving imported grain, delivering large-diameter pipe to Nadym with ship-to-ship transfer in the Novyy Port region, and shipping cargo to Dudinka and the Yakutskaya ASSR. We should continue developing these useful practices, in particular begin carrying out the joint project to organize work by the lighter carrier system to deliver cargo to the northern regions of the country.

The above-enumerated tasks can only be accomplished if we make maximum use of available reserves and increase the carrying capacity of the fleet by introducing the latest achievements of science and technology.

Specific indicators for introduction of progressive technology in shipping and loading-unloading work have been ratified for the five years. It is planned that the Ministry of the River Fleet will increase the volume of cargo shipping in forced-bend caravans by 27 percent, introduce line shipping for carrying cargo to foreign countries, incorporate a new cargo flow of apatite concentrate for the Sumgait Production Association of the Ministry of Chemical Industry with transshipment to railroad at Astrakhan' reaching a volume of 400,000 tons in 1985, introduce the more streamlined method of hydromechanized loading of



construction and in ships with deep concentration of the pulp and in 1985 process 3 million tons by this method, incorporate the use of new classes of vessels including 11,500-ton caravan-type diesel freighters and Luch class air-cushion passenger vessels, and begin using the highly productive gripper-bunker and container reloaders. The Main Administration of the River Fleet of the Ukrainian SSR is to begin building and operating 3,000-ton diesel freighter-platforms, and the Main Administration of the River Fleet of the Belorussian SSR is to incorporate the Poles'ye class shallow-draft diesel hydrofoil passenger ship.

Indicators of the technical level of river transportation have been ratified and characterize the further development and distribution of progressive methods of shipping that have been proven in practice. Plans envision increasing the volume of cargo shipping in mixed river-sea vessels by 19 percent for the RSFSR Ministry of the River Fleet and by 28.5 percent for the Main Administration of the River Fleet of the Ukrainian SSR; raising cargo turnover performed by large pushed caravans to 27.9 billion ton-kilometers for the ministry (compared to 22 billion in 1980); increasing cargo shipment in containers and stacks by 30 percent in the RSFSR Ministry of the River Fleet (including an increase of 4.3 times for containers with gross weights of 20 tons and more), two percent for the Main Administration of the River Fleet of the Ukrainian SSR, eight percent for the Main Administration of the River Fleet of the Belorussian SSR, and 100 percent for the Main Administration of the River Fleet of the Kazakh SSR. In order to make fuller use of the initial and final parts of the navigation season the RSFSR Ministry of the River Fleet and Main Administration of the River Fleet of the Ukrainian SSR have been given assignments to increase shipping by extending the navigation season through the use of icebreakers and other technical means. The increase is to be 15.5 million tons, 15 million of it by the ministry.

Unfortunately, the plan for the 11th Five-Year Plan was not able to solve a number of problems. Because of the inadequacy of capital investment appropriated to river transportation for construction and installation work, numerous projects were not included in the plan: expansion of the Yaroslavl', Perm', and Sarapul ports, the Leningrad Shipyard, and the Shipyard imeni Oktyabr'skoy Revolyutsii and construction of the Berezovskiy and Krasnodar shipyards and the plant to produce replacement and spare parts and ship equipment in Kamen'-na-Obi.

The problems of building housing for river transportation workers are not fully resolved, particularly in the northern regions of Western Siberia where plans envision introduction of a large number of mechanized docks built at the expense of the ministries of gas and petroleum industry.

Calculations show that provision for cargo shipment in river transportation in the 11th Five-Year Plan as a whole is significantly higher than in earlier periods. This is illustrated by the fact that standards have been adopted for all Union republics for dimensions of ship loss and fleet requirements for unevenness of shipping navigation conditions. At the same time, the need for certain classes of ships is not fully satisfied. It was not possible to place an order for the requested volume of mixed river-sea ships to be built. The

production of small ships for small rivers continues to be inadequate. The question of building vegetable and motor vehicle carrying ships has not been fully resolved. The problem of bolstering the passenger fleet with ships to operate on Lake Baikal, in the Ob'-Taz Bay, and certain other basins remains unsolved.

For river transportation as a whole the productivity of self-propelled cargo transport ships is to increase six percent in the 11th Five-Year Plan, while the productivity of non-self-propelled ships will go up five percent, the intensity of loading-unloading work — 16 percent, and total ship downtime in port will decline by 13.4 percent. This will provide three-quarters of the growth in cargo turnover.

Successful accomplishment of the tasks given to river transportation in the 11th Five-Year Plan will be promoted by major steps that have been taken in the social area since 1981, including payment of rewards for years of service, supplementary pay for work at night, and privileges in buying uniforms.

There is no doubt that river transportation workers will use their typical energy and persistence to participate actively in the search for and realization of reserves to raise the efficiency and quality of cargo and passenger conveyance in order to fulfill the plan assignments of the five-year plan in every work sector.

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CSO: 1829/155



DEVELOPMENT OF WEST SIBERIAN RIVER PORT FACILITIES PLANNED

Moscow RECHNOY TRANSPORT in Russian No 1, Jan 82 pp 6-7

[Article by V. Sitnik, chief of the port service of the West Siberian River Steamship Company: "Development of Shipping to the Regions of West Siberia"]

[Text] In the 10th Five-Year Plan the ports of the West Siberian River Steamship Company [WSRSC] received significant development: the stock of mechanized equipment was augmented by more powerful loading machinery and new mechanized docks were put into use. This made it possible to increase the volume of cargo handling by 75.3 percent during the five years, including almost double for the port of Tomsk, 1.6 times for the ports of Novosibirsk and Kolpashevo, and 3.3 times for the port of Kargasok. The volume of extraction of sand, sand-gravel mixture, and gravel rose sharply. In 1980 the volume of extraction was 19.8 million tons, 1.9 times as much as in 1975.

The port of Tomsk has begun sorting sand-gravel mixture into two fractions: small, which is 5-20 millimeters, and large - 20-80 millimeters. Along with standard gravel customers in 1980 received about 1.9 million tons of this construction raw material, which was 5.5 times more than in 1976.

The collective of the Port of Tomsk significantly increased the volume of cargo shipping to the petroleum and gas regions of West Siberia. The port workers mastered the complex equipment of multiscoop dredges. Now working on them are highly skilled specialists V. V. Grishchenko, G. V. Gubin, V. M. Kikol', Z. N. Kumaritov, and A. V. Nazin.

The port of Kolpashevo has been brought to projected capacity and construction on all installations there has been completed. They have built a dock wall 250 meters long, an enclosed cargo storage area of 4,300 square meters, a complex of engineering structures, and administrative, sanitary-convenience, and auxiliary quarters. The port is equipped with modern portal cranes with load capacities of 5.16 and 27.5 tons and gas-powered and electric lift trucks. The port area has been fixed up and a repair-mooring point opened.

Novosibirsk port workers built a scaffold-type dock wall 50 meters long, which made it possible to increase the volume of sand processed in a year to 16 million tons. The left-bank sector has six portal cranes and a repair shop wing has been built with a garage and convenience quarters.

A great deal has been done in the port of Biysk: the length of vertical-type docks has been increased by 250 meters, three portal cranes were put into operation, the repair shop and rail and crane lines were rebuilt, and a garage and materials storehouse were built.

Cargo docks 150 meters long have been built at the Kamen'-na-Obi landing place. The cargo sector has been washed down, an ice-protection dike and circular road have been built, electricity and heat transmission lines have been laid, and two portal cranes were installed. In addition two KPl-5-30 floating cranes have been assigned to the wharf. All these things have helped increase the volume of cargo handling.

The northern ports have also been developed. For example, a dock, an enclosed cargo warehouse, 1,400 square meters of housing, a repair shop wing, and a garage with sanitary-convenience quarters have been built in the port of Aleksandrovo.

At the Parabel' landing place a vertical log-foundation dock has been built and a portal crane installed. The number of floating and portal cranes in the port of Kargasok has been doubled, while 1,045 square meters of housing was introduced for port workers and the area of the port was fixed up. The port collective began shipping cargo on the Vasyugan River, which proved transportation service to petroleum and gas extraction regions.

The stock of loading machinery was updated at the Mogochino landing place. At the Ust'-Cheryshskaya landing place the docks were equipped with portal cranes. The new Kemerovo port was launched in operation in 1977 and by 1980 was already processing about 1.2 million tons of cargo.

For the five years as a whole the steamship company received 14 floating cranes, 32 portal cranes, eight dredges, one reloader, 120 gas-powered and electric lift trucks, 12 bulldozers, and five excavators. During this time the fixed capital of the ports and landing places increased 42 percent; in 1980 it accounted for 27 percent of the fixed capital of the company.

The ports have become highly mechanized transportation enterprises. The mechanization factor is 2.4 cranes and 100 meters of dock front.

Port workers are energetically introducing new forms of organizing cargo-handling work. In the first stage they have organized fast processing of ships and other means of transportation. At the present time 42 docks are working in an optimal regime. The know-how of the Leningrad transportation workers as to continuous planning is widely used. Coordinating councils have been formed at transshipment ports (Barnaul, Novosibirsk, and Tomsk) to decide questions of cooperation between the river fleet and other forms of transportation. Unified through shifts of operations workers have been formed, and mutually coordinated planning of the processes of transportation means has been implemented. Each year port workers together with cargo shippers and receivers work out organizational-technical measures to speed up fleet processing at departmental docks and bring ships to these docks on a regular schedule.

In the port of Aleksandrovo all mechanized equipment of clients is at the disposal of port controllers in order to achieve more organized ship unloading.

Coordination of the work of allied forms of transportation and enterprises that ship and receive cargo is having a tangible impact: downtime for processing for ships, railroad cars, and motor vehicles is declining.

In the ports of Novosibirsk, Tomsk, and Ko'pashevo they have organized consolidated through comprehensive brigades (USKB's), and in the port of Tomsk they have cost accounting USKB's and have introduced the method of using through shifts on a uniform schedule and a brigade contract for repair of cargo-handling equipment and the local fleet.

The collective of the steamship company faces major tasks in the 11th Five-Year Plan to improve transportation service to the West Siberian petroleum and gas complex of Novosibirskaya, Tomskaya, and Kemerovskaya oblasts and Altayskiy Kray. There must be a further increase in the capacities of the ports and landing places, an increase in the carrying capacity of the company's own docks and the docks of cargo owners, development and consolidation of repair facilities, and introduction of progressive methods of labor organization and new technological processes.

In 1985 the ports and landing places of the steamship company, in order to fulfill the shipping plan, will have to increase cargo handling by 35 percent over the level attained in 1980 and increase the extraction of nonore building materials by 30 percent. To accomplish these things the company has worked out measures for further development of the material-technical base of the ports, training and advanced training for port workers, improving technical operations, and raising the working reliability of cargo-handling machinery. The second phase of the port of Tomsk is to be planned and built. The stock of cargo-handling machinery will be augmented by floating portal cranes, dredges, gas-powered and electric lift trucks, bulldozers, excavators, and cleaning machines. The repair shops in the ports of Aleksandrovo, Kargasok, and Novosibirsk and the Parabel' landing place are to be reconstructed.

Plans call for using personnel of the company to equip and reconstruct mechanized docks in the ports and landing places of Biysk, Barnaul, Kamen'-na-Obi, Ordynsk, Parabel', Kolpashevo, Kargasok, Aleksandrovo, Koltogorsk, Yurga, and Kemerovo. In the 11th Five-Year Plan mechanized river docks belonging to freight owners are to be built. The most important of these are the consolidated docks of Glavaltaystroy [Main Administration of Construction in Altayskiy Kray] in Barnaul, Spetskomplektneftegazstroy [Special Complete Equipment Supply Trust for Petroleum and Gas Construction] in Tashara, the supply depots of Tomskneft' and Tomskgazstroy in Tomsk, Koltogorsk, Strezhevoy, Aleksandrovo, Okhteur'ye (Vakh River), and Katyl'ga (Vayugan River), and the docks of the Tomsk crushing and sorting plant and the Chernorechensk cement plant.

The 11th Five-Year Plan envisions a 30 percent increase in the intensity of fleet processing, raising the level of full mechanization in handling of item and packaged cargo to 97 percent, vigorous introduction of brigade forms of labor

organization in loading-unloading work, and an increase of 10-15 percent in the mechanization factor in loading and repair work.

The port workers of the WSRSC will employ all their energy and ability to meet the challenges set before river transportation by the 26th Congress of the CPSU.

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CSO: 1829/155

## NUCLEAR-POWERED LIGHTER CARRIER

Moscow SOVIET MILITARY REVIEW in English No 8, Aug 81 p 28

[Text]

Lighter carriers, a new type of ships, appeared not so long ago. Without entering the port for discharge, such vessels usually leave the floating containers in the roadstead, and pick them up (filled with local cargo) on their way back. So, with the lighter carrier, a new type of vessel, a new type container — the floating lighter—has come into being.

The designers shaped the lighter so as to ensure convenient loading in the hold or on deck. Lighter carriers are used extensively, particularly on arctic routes where there are but few large well-equipped ports, yet the cargo volume increases from year to year. But lighter carriers can be used there during the shipping season only.

Scientists and specialists have recently developed a new, unique lighter carrier design. The vessel is provided with a nuclear-propulsion plant, is modern in shape and has the following characteristics:

length — 260 m, width — 32.2 m, displacement — 61,200 t, deadweight — 31,900 t. The 40,000-hp nuclear power plant develops a speed of 20 knots. Special fins located in the stern protect the propeller system and the hull against ice-floes. The vessel can carry 73 lighters.

The ship has comfortable cabins for the crew, a messroom, an enclosed swimming-pool, a cinema hall and a gymnasium.

This new container-lighter carrier, designed for use in arctic conditions can negotiate medium-thick ice-fields under its own power and through heavy ones if preceded by a nuclear-powered icebreaker.

All the working processes on the ship, including navigation, are completely automated.

Such a carrier is being developed for the first time in the world's practice and till now is unparalleled.

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CSO: 1812/69

## OCEAN AND RIVER

### NEW MARITIME PORT TO BE BUILT IN TALLINN

Tallinn SOVETSKAYA ESTONIYA in Russian 5 Mar 82 p 1

[Article: "There Will Be a New Port on the Soviet Baltic Coast"]

[Excerpts] The new Tallinn maritime commercial port will be the largest Soviet port on the Baltic. A ceremony in honor of the beginning of its construction was held on 4 March on the shores of Muuga Gulf.

Ships with displacement of 100,000 tons and more will be able to call at the new port built here in Tallinn. It will truly be a highly mechanized cargo-processing enterprise. The first start-up complex alone will be able to handle twice as much cargo as the present port of Tallinn. Full mechanization will make it possible to reduce the number of workers employed in labor-intensive loading-unloading operations by one-half.

Construction of the new port will unquestionably have a beneficial impact on the development of our trunk railroads, on the development of the city of Tallinn, and indeed on the continued development of the republic economy as a whole.

The new port is being built on a comprehensive basis. Along with production capacities there will be housing for the construction workers and port employees, as well as social and cultural-domestic facilities.

Many collectives from our country and construction and installation organizations of the Ministry of Transport Construction, Ministry of the Maritime Fleet, Ministry of Construction, Ministry of Railroads, and Ministry of Power and Electrification of the USSR will participate in building the port. The construction workers of our republic will do part of the work.

Finnish companies will also participate in building the port. They will do a large amount of construction and installation work. This will represent a new, convincing show of the traditional good-neighbor ties, friendship, mutual respect, and profound trust so typical of the relations that bind the Soviet Union and Finland.

The new port must be built very quickly; the first phase is to go into operation in just four years. Its construction will require lifting 14 million



cubic meters of earth from the bottom of the gulf, laying some 500,000 cubic meters of reinforced concrete elements, and building 23 buildings and structures.

This will be a hard job. It will require great effort, initiative, creative searching, and energy from all who participate in it.

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CSO: 1829/159

## OCEAN AND RIVER

### CENTRAL ASIAN SHIPPING DIRECTOR ON KARAKUM CANAL

[Editorial Report] Ashkhabad SOVET TURKMENISTANY in Turkmen 18 December 1981 p 4 carries a 700-word interview with K. A. Yesin, Director of the Central Asian Shipping Administration, on the commissioning of the ship "Magtymguly," built by the Aral'sk shipyards for use on the Karakum Canal. "The 'Magtymguly' and similar ships operate between Basheska and Nichka." This section of the canal was opened to freighter traffic in the Spring of 1981.

### FLOATING DEPARTMENT STORE IN KARAKUM CANAL

[Editorial Report] Ashkhabad SOVET TURKMENISTANY in Turkmen 29 December 1981 p 4 carries a 150-word article on the opening of a department store which operates on a ship along the "better than 450 kilometer navigable part of the canal...In the future an 820 kilometer section of the 1,100 kilometer Karakum Canal will be navigable...Ashkhabad will become a port. Intensive work is being done to widen and deepen the canal."

### CONSTRUCTION OF CANAL IN YILANLY

[Editorial Report] Ashkhabad SOVET TURKMENISTANY in Turkmen 24 November 1981 p 4 carries a 50-word dispatch by K. Rakhmanberdiev on the status of the Yilanly irrigation canal being built by "Dashkhovuzremvodstroy." One hundred forty kilometers have been excavated so far.

### KARAKUM CANAL IMPROVES FARMING IN GAVERS

[Editorial Report] Ashkhabad SOVET TURKMENISTANY in Turkmen 26 November 1981 p 2 carries a 350-word report by M. Sopyev, a kolkhoz chairman from Gavers rayon, in which he notes an increase in fruit and vegetable production since the Karakum Canal reached the kolkhoz.

### DOCUMENTARY ON KARAKUM CANAL

[Editorial Report] Ashkhabad ADEBIYAT VE SUNGAT in Turkmen 9 December 1981 p 1 carries a 100-word announcement on the documentary film "Captains of the Karakum," directed and produced by Cherkez Shamyradov. It focusses on the shipping route between Basheska and Mary.

# NEW CANAL EXCAVATION WORK AHEAD OF PLAN

[Editorial Report] Ashkhabad SOVET TURKMENISTANY in Turkmen 8 December 1981 p 1 carries a 200-word report by Sh. Mammedov on excavation work being done in Krasnovodsk oblast between Gyzylarbat, Garrygala, Gyzyletrek and Asenguly (on the Caspian) by "Turkmenremvodstroy." Pumping stations are now being built to supply underground water to kolkhozes and sovkhozes. Work is ahead of schedule.

CSO: 1834/1028

OCEAN AND RIVER

BRIEFS

CONTAINER SHIP MAIDEN VOYAGE--The container ship "Simon Bolivar" has made her maiden voyage. This motor ship was built for the Soviet Union by the shipbuilders in the Bulgarian city of Varna. Ships of this class can carry over 400 containers--four times more than is transported by ordinary trailer carriers. [Text] [Moscow MOSCOW NEWS in English No 9, 7-14 Mar 82 p 9]

CSO: 1812/69

## MISCELLANEOUS

### SCIENTISTS DEVELOPING PIPELINE SYSTEMS FOR SOLID MATERIALS

Moscow SOVETSKAYA ROSSIYA in Russian 27 Jan 82 pl

[Article by T. Vinogradova, engineer, and Ye. Syrtsov: "Putting Solid Loads in Pipelines"]

[Text] The Yaroslavl' Polytechnic Institute received confirmation from its colleagues in Kalinin: a contract has been signed on creative cooperation in development of devices using pulsing flows. But recently three Yaroslavl' scientists, candidate of technical sciences and docent V. P. Marchenko and senior teachers O. S. Myshkin and V. N. Shokhinin received an author's certificate (patent) for invention of a device to transport sand-gravel material.

We visited the department of hydraulic land improvement at the polytechnic institute. Department head V. P. Marchenkov showed us an operating model of the device.

"Formerly only gases and fluids were transported by pipeline," Viktor Prokof'yevich explained. "Now we are trying to 'pump' solid materials through."

In our country all of the gas extracted and 95 percent of the petroleum is delivered to customers by underground channels, by pipeline transportation. The total length of trunk pipeline systems in the USSR is more than 200,000 kilometers (more than half way to the moon!). But is it possible to transport solid minerals, for example ore and coal, in pipelines? The first attempts have already been made. The Noril'sk Metallurgical Combine is using a slurry line to transport copper-nickel concentrate a distance of 30 kilometers.

A start has been made. But many, many more pipelines are needed for ore, coal, and building materials. That is why the work of the scientists from the Yaroslavl' Polytechnic Institute aroused great interest in Moscow at the all-Union conference called "Hydraulic Transportation-81." Existing hydraulic transportation lines pump slurry in which the concentration of solid bodies is no more than 15 percent. The device proposed by the scientists from Yaroslavl' will make it possible to use artificial pulsation and increase its concentration three times.

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CSC: 1829/154



## MISCELLANEOUS

### STREAMLINING FREIGHT TRANSHIPMENT DISCUSSED

Moscow AVTOMOBIL'NYY TRANSPORT in Russian No 1, Jan 82 pp 19-20

[Article by N. Brayko, West-Siberian TTU: "Businesslike Cooperation--the Basis of Labor Achievements"]

[Text] The expanding scale of transportation services and mounting demands for greater efficiency and better quality call for the introduction of new and more progressive forms of cooperation between the different forms of transportation. It is, after all, no secret that sometimes goods of national economic importance are delayed en route and sit at stations or in ports awaiting for shipment over and above the established norms, their preservation in jeopardy.

We all understand that some of the difficulties with freight shipments are often due not only to shortages of means of transportation but also to purely organizational causes which could be eliminated at no great cost or investment. That is why growing cooperation between collectives of enterprises belonging to different forms of transportation and coordination of their efforts to meet the demands of the economy for freight transportation is so important.

Motor transport enterprises of the West-Siberian TTU [Freight Transportation Administration] haul freight from 5 railway stations in Novosibirsk and the oblast, as well as from the Novosibirsk river port and "Tolmachevo" airport. Each day it has up to 250 motor vehicles of different types and purpose in operation. We haul up to 1.5 million tons of freight a year from these terminals, 70-72 percent of it in a centralized manner.

The other transportation services are, in effect, our biggest customers. This imposes a special responsibility on collectives of motor transport enterprises for the timely outshipment of freight and for making loading and warehouse facilities available at stations and ports so as to assure the nonstop rhythm of the transport conveyer.

The extent of the coordination existing between the different forms of transportation operating at the Novosibirsk traffic junction is indicated by the fact that over the past ten years the volume of freight passing through the Novosibirsk river port has increased by more than 70 percent (without any

expansion of the port or the adjoining railway station), while the handling of freight by the direct "ship-to-car" and "ship-to-truck" method has reached 62 percent for the port as a whole, with lumber at 98 percent and gravel at 100 percent.

Businesslike cooperation yields positive results not only during the navigation period. During the winter crated and itemized goods, lumber, coal and freight in containers are unloaded at the approach lines to the river port, from where they are shipped on to enterprises and organizations in Novosibirsk. This frees loading facilities at railway stations and streamlines the utilization of the crane fleet. As a consequence, the railroad receives help from the personnel of other transportation services (river and road) in handling up to 9,000 freight cars during the period between navigation seasons.

A special commission set up under the oblast soviet executive committee supervises comprehensive interbranch socialist competition and coordinates the work of different transportation services. The transportation coordination commission's decisions are binding on us.

A coordination council has also been set up to supervise comprehensive socialist competition between transportation enterprises in the different services. It is headed by the deputy chiefs of the railroad, the shipping administration and the freight transportation administration (on a rotation basis from meeting to meeting). Its agenda includes both organizational-technical questions (progress in preparing for the navigation or its results) and questions involving the further improvement of comprehensive socialist competition.

The "efficiency" of these public organizations is assessed according to the performance of each participant in the socialist competition separately and the results of the transport junction's operations as a whole. Over the last few years the competing collectives of transportation workers have scored appreciable improvements in the technical and economic indices of utilization of transportation facilities. Last year the Novosibirsk transport junction was awarded a prize-winning place in the All-Union Socialist Competition of transportation junctions for the results of its operations, and the West-Siberian Freight Transportation Administration also contributed to the improvement of the transportation junction's operation.

With an eye on the overall tasks of the transportation junction, our administration defined a complex of organizational and technical measures aimed at improving the utilization of motor vehicles at stations and in ports and agreed it with the other transportation services. We can now definitely say that our efforts were effective.

The Transportation Administration changed the system of remuneration of drivers servicing the Novosibirsk-Tovarnyy railway station, making it possible to use tractor-trailer and semitrailer vehicles to haul small freight consignments. A similar system of payment per trip (call) was introduced for single-car shipments from the Novosibirsk-Yuzhnyy railway station, where the

administration concentrated tandem trailer vans. Shuttle semitrailer container rigs are used to haul multitonnage containers from Kleshchikha railway station, with three semitrailers assigned to each truck tractor. The Administration also tried installing "Granit" type radios on a trial basis in vehicles servicing railway stations and ports, but because of faulty design, they were incapable of providing stable radio communication and had to be removed.

When solving questions of strengthening labor cooperation it is essential to define work processes precisely. Every participant in the shipments must know clearly in what cases, when and whom to appeal and what steps to take.

A first step towards this is, in our view, for railway stations and ports to draw up uniform technological processes which would serve as a kind of connection passport. The uniform technological process would take into account the handling capacities of the station and the port, provide estimates of transportation requirements, and define the functions and duties of personnel in all forms of transportation.

Better work organization at junctions--railway stations and ports--made it possible for our Administration to reduce extranormative downtime of motor vehicles at loading-unloading operations by 8,200 vehicle-hours (as compared with 1975). In the years of labor cooperation the volume of freight shipments from stations and ports increased 30 percent (by 330,000 tons a year); this, moreover, was achieved with virtually no increase in the total number of cargo vehicles, i.e., mainly by improving qualitative work indices.

Businesslike cooperation between the river and railroad workers has resulted in the combining of duties by port and station freight-loading supervisors. Now the port supervisors handle the unloading of pipes, reinforced concrete, cement and many other goods, while the railroad supervisors handle the loading of perishables, lumber and containerized freight. Thanks to this our counterparts were able to eliminate 18 jobs and reduce the loading time of cars and ships.

Cooperation between transportation workers has benefited over the years from many good initiatives. A system of cooperation is gradually taking shape at junctions, which relies on uniform technology, work organization according to continuous plan-schedules, contact schedules, etc. At the same time, however, taking into account all aspects of businesslike cooperation, one cannot help noting the existence of unutilized reserves as well as shortcomings in the organization of the work of the transportation personnel.

One of the reasons for difficulties in the operation of junctions is the departmental isolation of different forms of transport. Each has its own work plans, its own indices, its own system of moral and material incentives. For example, often both the river people and the railroad people may have fulfilled their plans, yet freight is delayed in warehouses, cars and ships. Sometimes it's the other way round, and the transportation facilities are there, but there's no freight, i.e., there's a temporary decline in freight haulage by rail or water, often due to late commencement of the navigation season. Thus,

the plan is there, but there's no freight, and no adjustments for this are made. This, naturally, is reflected in the transportation administration's work indices.

In the last few years the transportation services have been introducing automated control systems at a fast rate. Each transportation ministry sets up its own system, with its own computer centers in the localities. It would probably be more expedient to use one of them as a base for setting up a single interdepartmental computer center at some transportation junction so that there would be a single file of data coming in from all transportation services, which could be used to draw up work programs for the transport junction as well as the adjoining region. In effect, the transportation junction needs a single "data bank" to solve its problems in good time. It is necessary to tackle these problems on an interdepartmental basis, and, in our view, participation of the USSR Gosplan's Institute of Comprehensive Transportation Problems (IKTP) is essential.

At present containers belonging to the railroad service, the river service, the aviation service and the motor vehicle service, as well as to serviced enterprises and organizations, are being shuttled all over the country. Occasionally containers may be sitting idle in one place while somewhere else freight can't be shipped because there are no containers available. All containers should be placed under the management of one of the transportation services. This would benefit not only the transportation people but the national economy as a whole.

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## MISCELLANEOUS

### DEFECTIVE CARS DELAY GRAIN HANDLING AT BALTIC PORTS

Moscow GUDOK in Russian 2 Mar 82 p 1

[Article by L. Lyubimov, Riga: "The Ports Are Waiting for Cars"]

[Text] In recent times the Baltic Railroad has done a poor job of meeting the requests of the ports for delivery of boxcars. An especially alarming situation has developed on the Shyaulyay, Riga, and Kaliningrad sections. The road administration believes that the principal reason for the failures is inadequate deliveries of empty cars through interroad adjustments. This is true. With its own resources the Baltic Railroad cannot meet the needs of the Baltic ports for rolling stock.

By an order of the minister of railroads on 12 February the associated railroads are obligated to send 400 cars a day for grain loading. In February 4,600 boxcars were received, but not one of them was suitable for loading without appropriate preparation. Here are some examples. They received 2,500 cars from the Moscow Railroad: 111 of them had no doors, 416 needed minor repairs, and more than 200 needed depot overhaul. Rolling stock coming from the Gor'kiy and Belorussian railroads is in about the same condition.

For example, on 21 February 154 cars were delivered to the car-washing sidings in Kretinga. After inspection 60 of them were declared defective. But only 33 of the remaining ones were prepared for grain. On 22 February 131 cars were brought in, but 36 were returned and only 32 were prepared for grain shipping.

The Riga preparation point should prepare 100 cars a day for grain shipping, but it only produces a little over 80, even though it has all the needed capacities.

The Baltic Railroad has an assigned fleet of grain cars. But after unloading on other roads they are not returned promptly. They are taken over by the Belorussian, Moscow, Gor'kiy, and Sverdlovsk roads.

But even the Baltic road itself has not set up proper preparation of boxcars after it has unloaded them. In the Shyaulyay section, in particular, it may happen that only 120 of 200 boxcars are delivered for washing and preparation. But even of them, only 26 are suitable for grain. At the same time 80 boxcars a day are loaded with other products.



The Riga section also does a poor job of preparing cars. Each day some 100 cars of the available fleet there are not delivered to washing and preparation points.

Yes, the Baltic needs help. But the managers of the road must not look only to their neighbors. They themselves must establish precise procedures in selecting and preparing boxcars and monitor their delivery to the ports.

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CSO: 1829/154

## MISCELLANEOUS

### BRIEFS

JAPANESE LIFT TRUCKS—The new Japanese diesel lift trucks from the TSM Company, received recently at the Tallinn mechanized loading-unloading section, speed up the performance of many operations considerably. The new lift trucks, with load capacities of 1.5 tons, are being used successfully to process single-car and small shipments in the warehouses of the city commercial station of Tallinn, in Narva, and in other stations of the section. [Text] [Tallinn SOVETSKAYA ESTONIYA in Russian 18 Aug 81 p 3] 11176

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